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**Lead Market Initiative for Europe
Mid-term progress report**

Executive summary Lead Market Initiative mid-term progress report

Demand-side innovation policy is an emerging and promising policy area in Europe and beyond. The Lead Market Initiative is the first comprehensive effort at EU level for a coordinated demand-side innovation policy approach. It uses a number of policy instruments to facilitate the uptake of new innovative products and services in the market. This mid-term progress report presents an analysis of results attained in the implementation and governance of these sizeable demand-side innovation policy packages for 6 lead markets, namely bio-based products, eHealth, sustainable construction, protective textiles, recycling, and renewable energy.

The choice of demand-side innovation instruments (regulation, public procurement, standardisation and complementary activities) for the ‘policy mix’ of each action plan seems to be appropriate. The full assessment per market area is given in chapter 2. Some highlights are in:

Public procurement

A key action in the LMI was promoting networking and cooperation among public procurers. Calls¹ under the Competitiveness and Innovation Framework Programme (CIP) funded networks of public procurers in the areas of sustainable construction, protective textiles and eHealth, with projects due to start late 2009. In recycling, the CIP call on “Championing Eco-innovation”² will support activities in public procurement, particularly Green public procurement.

Standardisation, Labelling and Certification

In the area of eHealth, a recommendation on cross-border interoperability of electronic health record (EHR) systems has been adopted. Important results can be seen from epSOS³ (Smart Open Services for European Patients) pilot, that has led to cross border cooperation between Member States and acceleration of uptake of EU-wide eHealth solutions. A thematic network on quality labelling and certification of electronic health record systems is about to be launched. The European Committee for Standardisation (CEN) has also set up a Working Group on sustainable construction to carry out an inventory of currently existing standards and to identify possible needs for further contributions to the Lead Market Initiative. The Commission issued two standardisation mandates to CEN on bio-based products; a mandate for the elaboration of standards for bio-lubricants and bio-polymers, and a mandate for the programming of standards for all types of bio-based products.

¹ Funded by the CIP- ICT Policy Support Programme and by the CIP-EIP Programme

² See call CIP-EIP PROINNOEurope-ENT-CIP-09-C-N02S00

³ Funded by the CIP- ICT Policy Support Programme

Legislation

Recently adopted legislative measures strongly contributed to the objectives pursued by the LMI (e.g. Renewable Energy Sources Directive⁴, Waste Framework Directive⁵). Although they cannot be directly attributed to the LMI as such, they serve as an important catalyst for the development of the sectors concerned.

Complementary actions

Some funding was available at Community level to bring down barriers in getting innovation products to the markets. For example, a Seventh Framework Programme (FP7) NMP⁶ call targeting the personal protective equipment and clothing sectors addressed not only technical aims, but many funded projects (with a strong SME participation) have the implementation of the LMI and/or better use of standards among their aims. Other highlights are: the FP7 call on sustainable biorefineries⁷ for developing technologies to make bio-refinery production cost-effective and coordinating better existing bio-refinery related research in Europe, and the 2009 FP7 Regions of Knowledge call⁸ which engaged regional actors to the LMI sectors. The Competitiveness and Innovation Programme supported networks of clusters under the Europe INNOVA umbrella⁹ and activities in eHealth.

Commitment of public and private stakeholders

In 12 out of 16 Member States for which information is available¹⁰, there is some evidence of new innovation policy developments partly as a result of and mostly coinciding timely with the LMI. Many European countries, including as Finland, the UK and the Netherlands are now putting demand-side innovation policy at the heart of their innovation strategies. The results of the 2009 Innobarometer¹¹ show that almost half of the questioned companies reported a positive effect on their innovation activities from at least one demand-side policy related change.

The LMI created new networks and bilateral contacts across policy areas, actors and sectors, as well as across the Commission services. The implementation of action plans mobilised for example public procurers, professional public procurement expertise centres, standardisation organisations and professional bodies.

A sub-group on innovation policy/ LMI of the Enterprise Policy Group (EPG) was established to ensure contact with Member States' innovation policy makers and support their involvement in the LMI. Advisory 'contact' groups were newly founded or designated from existing expert groups in the 6 sectors to advise on the implementation of the action plans.

⁴ Commission Communication COM(2008) 19

⁵ Commission Communication COM (2008) 98

⁶ 2nd call of the Nanotechnologies, Materials and new Production technologies (NMP) theme in FP7

⁷ FP7-2009-BIOREFINERY_CP

⁸ See: http://cordis.europa.eu/fp7/capacities/regions-knowledge_en.html

⁹ See call reference: EuropeINNOVA-ENT-CIP-09-C-N01S00

¹⁰ Results of MS questionnaires are presented in chapter 4

¹¹ According to the Innobarometer 2009, more companies reported demand side factors (regulations, standards, public procurement) as having a positive impact on their innovation activities than supply side (subsidies, tax incentives) http://www.proinno-europe.eu/admin/uploaded_documents/Innobarometer_2009.pdf

The newly formed 'Ad-hoc Advisory Group for Bio-based Products' is the first time that a cross-disciplinary expert group has been set up at European level to discuss renewable raw materials as well as bio-based products. In sustainable construction, a steering group composed of Member States, trade and professional organisations and research organisations will perform a systematic screening of national building regulations and prepare case studies on administrative costs and good practices for simplification of administrative procedures in the construction sector.

CONCLUSION

The Lead Market Initiative is still at an early phase of implementation. Policy makers and stakeholders are engaged in a learning curve in the implementation and governance of this demand-side innovation policy approach.

In the short term, the activities of the LMI can stimulate demand-side measures in Member States. Real impact can, however, only be expected 5-10 years from now.

The action plans adopted in December 2007 continue to be valid. They leave sufficient room for necessary smaller adjustments. A number of promising activities in the action plans are in the pipeline for completion in the second phase of the initiative. However, momentum for implementation of the LMI's action plans needs to be further increased. In particular, it is clear that for a real impact, a more active involvement of Member States and corresponding policy take-up of the LMI at national level are needed.

Thus, with action plans producing new activities and deliverables, the challenges ahead will be to strengthen the links and coordination with national innovation policy measures, to achieve greater visibility and to establish links with supply side measures.

The designated 'contact groups' could be enlisted more effectively to increase visibility and dissemination of the LMI's activities to businesses and other actors of the innovation 'ecosystem', such as regulators, professional bodies, sectoral stakeholders and civil society. The Commission, the Competitiveness Council, the Member States, business leaders and other stakeholders should provide stronger political visibility to the LMI's activities. For example, the three CIP-funded public procurers' networks mobilise the purchasing power of public procurers in innovation, although their impact for the markets in Europe as a whole may be limited. Therefore, connecting the LMI's networks to activities of national, regional and local public procurers is paramount to catalyse greater impact of the LMI. In order to reach out better to companies and regional/local policy makers, the Enterprise Europe Network is envisaged to play an important role in the second half of the LMI.

Regarding the policy instruments used in the action plans, operational tools for demand-side innovation policy still need to be developed further.

At this early phase of implementation, it is considered that:

- Further progress is needed in the implementation of the existing action plans;

- The criteria for identifying possible future areas should be updated, notably by strengthening the links with societal benefits;
- The inclusion of new areas in the lead market initiative, such as space-derived applications¹², should be conditional to strong commitment from Member States;
- In parallel, national and regional lead market initiatives with a strong international market potential could be encouraged and benefit from Community support through existing support mechanisms.

This report also proposes an approach to assess the impact of the LMI to be used for the final ex-post evaluation report planned for 2011. This assessment is another input for policy learning and evidence-based policy design which are very important in this emerging area.

Looking at future developments in designing demand-side innovation policy:

More could be done to make both blades of the scissors of supply and demand work better together to stimulate innovation. Stimulating innovation in markets is often best achieved through smart combinations of supply and demand policy measures. At Community level, a better coordination between the measures under the LMI and supply-side instruments such as the Recovery Plan, European Technology Platforms, Joint Technology Initiatives and ERANets has a great potential. This approach has already been proposed in ICT¹³.

There is a considerable scope to enhance mutual learning between practitioners in and outside the EU¹⁴ in designing demand side innovation policies (such as promoting the use of standards to drive innovation, legislation that fosters innovation¹⁵ and new applications of public procurement (e.g. pre-commercial public procurement).

As complementary activities, specialised clusters in the LMI sectors in Europe should be linked more closely to the LMI's activities, as they will create a launch pad for companies to introduce their new products and services.

¹² Conclusions of the 6th Space council 29/05/09

¹³ To cut across the phases of research, testing, procurement and deployment of innovative products and services, as has already been proposed for ICT-based innovations, see COM(2009)116: "A strategy for ICT R&D and Innovation in Europe: Raising the game"

¹⁴ See ongoing OECD work on demand-side innovation policy

¹⁵ Such as the Renewable Energy Source Directive (RES), SCP/SIP, and The Waste Framework Directive

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CHAPTER 1: THE BASIC PREMISE OF THE LEAD MARKET INITIATIVE: INNOVATION-FRIENDLY MARKETS

The Aho¹⁶ 2006 report concluded that the lack of innovation-friendly markets in Europe holds Europe back as an innovation location. Post-regulatory fragmentation, complex standardisation procedures and disjointed public procurement have led to a lack of market scale which in turn reduces the rate of return on introductions of innovative goods and services to the market.

The Lead Market Initiative is the first time that a demand-side innovation policy package is launched at Community level. It introduces a new way of coordination, engagement and building the capacities and incentives for markets to play a major role in the innovation system in Europe

Linking demand-side innovation policy with supply-side innovation policy would generate additional benefits. Facilitating the growth of lead markets is an approach to bridge the gap between the generation of new technologies and the market success of innovations. The gains from closing the gap could include more rapid returns on investments and thus greater incentives for expanding private investment in R&D; location advantages for R&D and production facilities; higher productivity, increased exports, ultimately leading to higher levels of growth and employment.

Definition of the LMI:

It is important that we reiterate the definition of ‘lead markets’ and of the ‘Lead Market Initiative’. The concept of lead markets as used by the Commission is:

A lead market is the market of a product or service in a given geographical area, where the diffusion process of an internationally successful innovation (technological or non-technological) first took off and is sustained and expanded through a wide range of different services¹⁷.

The “lead markets” with a sustainable potential can not be artificially created. They can, however, be facilitated by offering best possible conditions for transforming ideas into new products and services. This is the basis for the policy choices made by the Commission in the action plans of the LMI. Coordination of targeted policy measures in a horizontal way could

16 THE AHO GROUP REPORT (JANUARY, 2006) "CREATING AN INNOVATIVE EUROPE", AT [HTTP://EC.EUROPA.EU/INVEST-IN-RESEARCH/PDF/DOWNLOAD_EN/AHO_REPORT.PDF](http://ec.europa.eu/invest-in-research/pdf/download_en/aho_report.pdf)

17 Commission Communication, Implementing the Community Lisbon Programme: A Policy Framework to Strengthen EU Manufacturing - towards a more integrated approach for Industrial Policy http://ec.europa.eu/enterprise/enterprise_policy/industry/industrial_2005.htm#com, COM (2005) 474 final. See also the Mid-term Review of the industrial policy at http://ec.europa.eu/enterprise/enterprise_policy/industry/doc/mtr_in_pol_en.pdf

better foster innovation in specific areas, while avoiding creating burdens on innovative businesses and other organisations.

Definition of the Lead Market Initiative used by the Commission is:

The Lead Market Initiative identifies a first set of markets with the potential to become ‘lead markets’ and calls for urgent and coordinated action through ambitious action plans for these markets, in order to rapidly bring visible advantage for Europe’s economy and consumers¹⁸.

In practice, this means that the Lead Market Initiative is a coherent action package in 6 sectors of mostly EU-level and mostly short-term public intervention measures (in public procurement, standardisation, legislation, complementary support) to facilitate demand growth for innovative goods and services in these sectors. This requires cooperation in policy coordination and policy implementation at EU and national levels and involvement with industry and other stakeholders such as NGOs and consumer groups.

The European Parliament (EP) welcomed in its report¹⁹ the Commission's proposal to launch a LMI, aimed at facilitating the marketing of new innovative products and services in areas where the EU can become the world leader.

The long-term goals of the Lead Market Initiative were clearly stated in the May 2008 Competitiveness Council conclusions, as quoted below:

“- to unlock market potential for innovative goods and services by removing obstacles in view of enabling European enterprises to enter new and fast growing global markets as lead producers whilst at the same time benefiting European consumers in areas of particularly high economic, societal and environmental benefits.“

“- to make a significant contribution to bridging the gap between the generation of promising new products, services and technologies and their market success by creating conditions that facilitate the expression of demand, thus reducing costs and facilitating “first mover advantage” internationally.”

The scope of this report:

The scope of this mid-term progress report is defined in the LMI Communication where it says: “A mid-term progress report will be presented in 2009 on the progress in implementing

¹⁸ Commission Communication, A Lead market initiative for Europe, COM (2007) 860 (final 21.12 2007). The Communication and all relevant documents are available at the official EC Lead Market Initiative website: <http://ec.europa.eu/enterprise/leadmarket/leadmarket.htm>

¹⁹ Report of the Committee on Industry, Research and Energy (ITRE) on “Putting knowledge into practice: A broad-based innovation strategy for Europe; (2006/2274(INI))” FINAL A6-0159/2007

the action plans and on the commitment of public and private stakeholders”. The report consists of six chapters and an executive summary. Chapter 2 provides an assessment of the progress made in the six action plans and the cross-cutting activities of the LMI implementation. Chapter 3 presents an analysis of the involvement of Member States, business and other stakeholders in the LMI’s implementation. Chapter 4 provides an overview of the methodological approach used for assessing the impact of the LMI, in preparation of the final report of 2011. Chapter 5 proposes some suggestions for future directions of the LMI. Chapter 6 revisits the identification process for additional lead market sectors.

Changed economic outlook since start of LMI:

Since the launch of the Lead Market Initiative, the global economic outlook has changed fundamentally. Since the last quarter of 2008, manufacturing output in different lead market sectors was affected greatly with the largest reductions occurring in metals, chemicals, and textiles²⁰.

To spur competitiveness in the medium and long run, public spending packages should induce more innovative economies, economies that then prepare themselves to meet the pressing societal challenges (climate change, CO² emissions, work force needs, biosphere protection and consumption/waste reduction) of the decades to come. The challenges facing Europe will require innovative solutions (product, process, high and low tech) that focus simultaneously on market, user and societal needs. Demand-side innovation policy (through public procurement, standardisation, legislation, clusters) can foster existing and emerging markets for innovative goods and products.

Innovative products and services will enable Europe to seize the opportunities offered by this crisis and come out well prepared for meeting the challenges of a new world economy, such as in the transformation into a low carbon economy. When the upturn starts, the Lead Market Initiative’s sectors (notably sustainable construction, recycling and renewable energy) will provide the green technologies and products needed for this transformation.

As reflected in the actions of the Lead Market Initiative, this implies a strong role for government as a sophisticated, lead buyer. About 45% of the EU’s GDP is dedicated to public expenditure. Governments can also apply their regulatory prowess and can take action to overcome fragmentation in the implementation of EU and national regulation, which is hampering market growth. At the same time, government may use targeted legislation to catalyse a market transformation process (for example in environmental regulation).

²⁰ Eurostat data

7. PROGRESS OF THE IMPLEMENTATION OF THE ACTION PLANS OF THE 6 LEAD MARKET AREAS

The aim of this section is to provide an **assessment** of the progress made in the implementation of the action plans (first part) as well as each of the cross-cutting measures (second part) during the first 15 months of the LMI, compared to the action plans published in the Annex I of the December 2007 LMI Communication.

As part of the Lead Market Initiative, each of the 6 lead markets developed an action plan (roadmap) of policy activities for the period 2008-2011. These were published in the Annex I of the LMI Communication²¹. The actions were developed in cooperation with an EC-wide inter-service working group consisting of representatives from various Directorate Generals', such as ENTR, SG, ENV, INFISO, BEPA, ECFIN, TREN, COMP, AGRI, MARKT, RTD, REGIO, TAXUD, MARE, TRADE, JLS and SANCO.

Obstacles identified during the identification phase of the development of each respective lead market were addressed by the definition of 7-20 measurable actions depending on the lead market in question.

In short, it can be concluded that while most of the actions proposed have been implemented, it may be too early to assess whether this combined effort has had a measurable impact. Moreover, while most deadlines were respected, some actions were somewhat delayed. Only a few actions have been, or will be, abandoned as they did not turn out to be appropriate for reaching the set objectives of the lead market in question. Few actions will be slightly adapted to better match their aims and ensure their successful implementation.

The action plans contain a mix of policy measures (in public procurement, standardisation/certification, legislation and complementary activities). The reason for this mix was that the whole package could attain greater impact than the sum of its parts. In the second half of the LMI, this could be assessed better, with many actions nearer to completion.

²¹ Commission Staff Working Document, A Lead Market initiative for Europe, Annex 1, SEC(2007) 1731

Progress made in the 6 action plans and forecast/ preview for the period till 2011

7.1.1. eHealth

The health sector in the EU employs almost 10% of the total workforce and corresponds to almost 9% of GDP. The eHealth industry in the EU 15 was estimated to be worth close to €21 billion in 2006, including salaries of relevant employees²². Research has suggested that the health ICT industry has the potential to be the third largest industry in the health sector with a global turnover of €50-60 billion, of which Europe represents one third.

eHealth was chosen to be one of the six markets of the Lead Market Initiative²³ due to its market potential in terms of growing demand and market growth opportunities, changing demographics, disease patterns and healthcare capabilities. Without significant reforms, including the better use of eHealth, health expenditure is expected to increase from 9% of GDP at present to around 16% by 2020²⁴ in response to an 'ageing'²⁵ Europe. Without better tailored and more effective health and social care services, these trends will put serious pressure on Europe's social models and public finances. eHealth can help to deliver better care for less money within citizen-centred health delivery systems. It also has strong potential for encouraging innovation and leveraging other market segments such as pharmaceuticals and medical devices.

As part of the LMI for eHealth, a roadmap of policy recommendations for the period 2008-2010 was developed in cooperation with an EC-wide task-force including representatives from DGs SANCO, EMPL, JLS, COMP, MARKT, REGIO and RTD, and coordinated by DG INFSO.²⁶ Barriers delaying successful market growth, such as market fragmentation, lack of legal certainty, lack of financial support and procurement issues, which collectively affect the development of demand for eHealth products and services, are thoroughly considered in the action plan. These four main obstacles to the development of the eHealth domain are addressed by twenty measurable actions.

The following pages include detailed answers of the progress of each action.

Action 1: Launch pilot actions under the CIP

Four eHealth-related projects have been launched under the first call of the Competitiveness and Innovation Programme's ICT Policy Support Programme (CIP ICT PSP) in 2008 and deadlines set out in the roadmap have been respected. epSOS (Smart Open Services for

²² Health Information Network Europe (HINE) report 2006 – European eHealth forecast

²³ Communication "A lead market initiative for Europe" - COM(2007)860 (21.12.2007). The Communication and all relevant documents are available at the official EC LMI microsite: <http://ec.europa.eu/enterprise/leadmarket/leadmarket.htm>

²⁴ Healthcast 2020, PWC

²⁵ The number of people over 50 in the EU will rise by 35% between 2005 and 2050. The number of people over 85 will triple by 2050 (OECD)

²⁶ The specific eHealth Task Force report related to the LMI Communication can be accessed at: http://ec.europa.eu/information_society/activities/health/docs/publications/lmi-report-final-2007dec.pdf

European Patients), whose objective is to deploy, in real life settings, patient summaries and ePrescription across national borders of 12 Member States, is making particularly good progress. Calliope, a thematic network, whose main objective is to promote interoperability, will provide a roadmap for actions based on an agreement of 16 Member States with the possibility to include additional Member States and more stakeholder representatives. CIP ICT PSP call 3 for patient-centred health service will provide further support to deployment of telemedicine services by supporting a large-scale project for the creation of evidence on a large scale of the effectiveness of these types of services. A thematic network on procurement will also be funded (see Action 19 below). The basis for these calls has proven to be correct and further calls are foreseen for this action.

The action also grew out of the original eHealth Action plan (2004) but the LMI provided important political momentum and continuity since the eHAP foresaw actions only until 2010. In this way LMI will have a definitive importance regarding the future funds for eHealth deployment under CIP ICT PSP and/or any possible new instrument which may be created.

Action 2: Introduce eHealth Innovation Scorecards/Benchmarking to monitor eHealth performance in Member States (MS) and facilitate learnings

This action is ongoing as the EC is developing a study on eHealth benchmarking in which indicators for innovation are likely to be included. The terms of reference for this study will be drafted in the coming months and despite small delays it is expected that the study will be launched in 2010. A study on business models for eHealth has been directly supported by CIP ICT PSP and the LMI was the political context and legal basis under which the study was proposed.

The LMI was the main driving force behind the business models study and the potential benchmarking study as the need for more accurate market data was highlighted in the preparation of the initial task force report.

Action 3: Coordination actions including exchange of best practices at i2010 sub-group meetings and annual eHealth conferences

The i2010 sub-group meetings and eHealth ministerial / high level annual conferences provide excellent fora for the exchange of good practices and informed discussion between national representatives. The i2010 subgroup is also kept regularly informed about the progress on the implementation of the eHealth Action plan and the LMI. LMI was featured throughout the 'Economy' stream of the recent eHealth 2009 conference. The EC has also funded the 'Good eHealth' study, a database of case studies of successful eHealth implementation, and the www.epractice.eu is a further way of sharing case studies. All deadlines have been respected and the action is ongoing.

A new initiative aimed at setting up a High Level group, consisting of national representatives at State Secretary level, was launched in 2008. The objective of the group is to enhance European Governance in eHealth and facilitate deployment and the first informal meeting was held during the ministerial eHealth conference in Prague under the Czech Presidency of the EU.

This action would have been implemented without the LMI, but it has provided useful political awareness and impetus among Member State Health authorities to focus more on market aspects.

Action 4: Adopt Recommendation on eHealth interoperability

The Recommendation was adopted on July 2 2008 within the so-called "social package," and is in line with the work programme of the Commission in 2008. The impact of the Recommendation will be measured after one year from its adoption, in line with point 18 of the Recommendation according to which "Member States are invited to report, on a yearly basis, to the Commission on the measures they have taken in relation to the implementation of cross-border interoperability of electronic health record systems."

The LMI and its capacity to boost economic growth and employment is the framework policy initiative for the implementation of the Recommendation and it multiplies the political importance and impact of the interoperability for eHealth in Member States.

Action 5: Favour the application of Recommendation on eHealth interoperability by enhancing cooperation between MS to build coherence in their health systems

The Recommendation invites Member States to engage in active cooperation with other Member States and relevant stakeholders to ensure the adoption and implementation of standards that make the cross-border interoperability of electronic health record systems feasible. The i2010 working sub-group for eHealth will provide a forum for annual updates in 2009. The Publication of the EC-funded report on Semantic interoperability, including a roadmap for required policy steps, will also provide good stimulus for discussion and action. CALLIOPE, a Thematic Network with a focus on cross-border eHealth Interoperability, will also follow the implementation of the recommendation in Member States. Furthermore, two projects will be funded under the ICT Strand of FP7 call 4, on interoperability testing and promotion of interoperability of Personal Health Systems.

The LMI played a decisive role in securing the funding for activities related to the implementation of the Recommendation.

Action 6: Define required standards, establish review committee to identify focus areas

Work on this action has been somewhat delayed as the EC has not yet approved the second year work plan. Work is, however, in progress by the coordination group. A presentation to i2010 sub-group on eHealth in September 11 2008 was appreciated and led to useful MS feedback. The group's first-year report has been submitted and awaits EC approval before the 2nd year budget can be confirmed. EPSOS and Calliope programmes are contributing to reach the objectives of the action and are cooperating with the Mandate 403 working group. Despite some delays the action has proven to be on correct basis and no changes are needed.

The LMI has helped to communicate a sense of urgency for this project to be successful, and helped to confirm within EC and ESOs the need to secure the necessary funding for the next phase.

Action 7: Issue guidelines for certification of eHealth applications and Action 8: form expert group to encourage MS to establish a coordinated work programme

The Recommendation on cross-border interoperability of Electronic Health Record (EHR) invites Member States to explore existing technical standards and possibilities to put into place a joint or mutually recognised mechanism for conformity testing and certification. Self-certification of industry and international practices are also taken into account. The progress will be measured in the 1st Report on the implementation of the Recommendation. Under this objective the Thematic Network was successfully launched. Under CIP ICT PSP Call 2, a thematic network on certification is currently being negotiated. The eHR-Q-TN, involving 28 participants from 24 countries, will be funded for 3 years. It will explore and propose a procedure for EU-wide labelling and certification of EHR systems, focusing on interoperability, security and other requirements such as ethical issues. The thematic network will build on the achievements of the Q-Rec project, funded under FP6.

Both actions are ongoing and until now deadlines have been respected and no changes are foreseen. The LMI provided a useful political umbrella for the creation of the thematic network, as it was the main policy basis of the call.

Action 9: Screen existing EU legislation related to eHealth and provide clarification and guidance for applying the legal framework for eHealth products and services

The objectives of the action will be reached with the delivery of a planned EC staff working paper on the EU legal framework on telemedicine which will be adopted by the end of 2009. In preparation of the staff working paper, the existing Community legislation applicable to eHealth products and services will be screened under the action outlined in Communication of

Telemedicine²⁷. Although this paper will present cases on telemedicine, the same legal framework can be applied to all eHealth services. This topic was the main focus of the meeting of the i2010 sub-group on eHealth on 15 January 2008 and a special workshop was organised at the eHealth 2009 ministerial conference in Prague on February 18 2009. Following the adoption of the Communication, the EC is envisaging an eHealth/telemedicine platform to strengthen the framework and opportunities for patient and health professionals' networking and input.

The action is on correct basis as that the working paper tries to responds to present legislative problems that the stakeholders are encountering in telemedicine practice. LMI provides a solid framework for the initiative and multiplies the political importance and impact of the deployment of telemedicine services in Member States.

Action 10: Analyse possibilities for adoption of a legal initiative for eHealth and telemedicine

The EC Communication on telemedicine²⁸, adopted on 4 November 2008, addresses *inter alia* issues about legal clarity on existing EU law applicable to telemedicine. The EC came to the conclusion that regulation at the EU level regarding Health is in principle applicable also to eHealth. Thus no legally binding measure is foreseen to be adopted by the EC in the near future and the soft law instruments will be considered in line with the principle of proportionality as instruments to boost deployment of eHealth services and products.

All deadlines have been respected but it is not necessary to keep this action as no legally binding measure is foreseen. The LMI has, again, provided political awareness within the EC and Member States of the importance of having a clear legal framework to support eHealth development.

Action 11: Adopt initiative to enforce Personal Data Protection legislation for products and services

On 15 February 2007 the Article 29 Data Protection Working Party published Working Document 131 on the processing of personal data relating to health in electronic health records (EHR), making it the most comprehensive document on this specific issue adopted. The Recommendation on cross-border interoperability of electronic health record systems addresses, adopted on 2 July 2008, makes an explicit reference to the WP131 and provides guidelines to be followed by MS in this direction. According to the Communication on the follow-up of the work programme for better implementation of the Data Protection Directive, (COM (2007) 87 final), the Directive should not be amended, but the ongoing review of the

²⁷ Commission Communication, Telemedicine for the benefit of patient, healthcare systems and society, COM(2008)689 (final, 04.11.2008)

²⁸ Commission Communication, Telemedicine for the benefit of patient, healthcare systems and society, COM(2008)689 (final, 04.11.2008)

guidelines might include addressing evolution of new technologies such as Radio Frequency Identification (RFID).

No further action is required in regards to this action point. LMI provides a solid framework for the initiative and multiplies the political importance for correct implementation of the Data Protection Directive and for the protection of personal data concerning health in Member States.

Action 12: Promote knowledge and information dissemination on safe and secure eHealth products and use of existing infrastructure to protect consumers – networks, best practice repositories, hotlines

The EC supports ongoing activities of the Continual Health Alliance in this regard. The EC is also working on the 'eYou Guide - Guide to your rights online', being drafted in response to the European Parliament resolution of 21 June 2007 on consumer confidence in the digital environment (2006/2048(INI)) which includes a reference to counterfeiting of medicines sold on the internet. Publication is planned for May 2009. The EC also addresses this action in the Cross border Health Directive , Article 5 "Responsibilities of the Member State of treatment" according to which "cross-border healthcare shall be provided in accordance with the legislation of the Member State of treatment and according to standards and guidelines on quality and safety defined by that Member State".

This action is ongoing and no changes are foreseen. The LMI has contributed to raising awareness at political level.

Action 13: Introduce the Electronic Health Insurance Card

The work on this action is ongoing and by the end of 2009 the Administrative Commission on Social Security of Migrant Workers will discuss and possibly adopt the necessary decision on the introduction of the eEHIC. The deadlines of the action were, however, not met as the process has proved to take longer than foreseen also because of the sensitivity of the issue. Cooperation within the EC amongst different DGs has been strengthened to contribute to the achievement of the objective. Under the LMI umbrella intra-EC cooperation has been strengthened regarding the possibility of introducing the Electronic Health Insurance Card.

Action 14: Improve legal clarity regarding medical reimbursement based on recommendations from the Health Services Initiative

The text of the proposed Cross border Health Directive indicates that the EC will promote and support the MS in developing the necessary standards and terminologies for interoperability, so as to ensure safe, high-quality and efficient provision of cross-border health services. The

Directive is currently undergoing the co-decision process, being discussed in the Council, the Council Common position is expected possibly under the Swedish Presidency. The Parliament voted on the proposal in first reading and did not ask for substantial changes in the articles related to eHealth. Due to the long process of the adoption of the directive the action was delayed but it proved to be on correct basis. This action would have been implemented without the LMI, but extra political awareness has done no harm.

Action 15: Provide citizens with relevant and up-to-date information on cross-border health services

The EC's Health Portal fulfils this role to a certain extent. The EC has also been informing the i2010 sub-group on eHealth about implications of the Cross border Health Directive for MS, in particular for health services provided at distance by electronic means and the MS obligations to provide patients on information concerning the cross-border healthcare. The action is ongoing and no changes are foreseen for the remainder of the LMI period. The action would have been implemented without the LMI

Action 16: Provide guidance on financing from such funding mechanisms as the EU structural funds and European Investment Bank initiatives specific to eHealth domain – workshops, networks etc

A meeting has been held with EIB, a representative of which presented EIB developments at the eHealth 2009 conference in Prague in February 2009. The action is ongoing and no changes are needed. The LMI initiated discussions with the EIB.

Action 17: Strengthen R&D on ICT for Health in FP7 and in Member States programmes

This is an ongoing focus of ICT within the health unit of FP7. An upcoming study on 'Monitoring eHealth Strategies: Lessons learned, trends and good practices' will gauge to the extent of ICT focus in health. The action is ongoing and would have been implemented without the LMI.

Action 18: Strengthen cooperation between national and community R&D testing and pilots, involve users in RTD actions

A CIP Call 3 Pilot A on telemedicine was launched on 29 January 2009 and was evaluated in June 2009. The pillar should be operational from January 2010. It will contribute to strengthening the cooperation between national and community R&D testing and pilots. LMI was used as a basis for the CIP call. A Regions of Knowledge call to support the cooperation

across Europe of regional 'research-driven cluster', related to the lead market eHealth is planned for 2010.

Action 19: Promote networking and cooperation among public procurers in the development process of new solutions

There have been general efforts to support pre-commercial procurement under FP7 IST 9.3 Networking actions to raise awareness of pre-commercial procurement in Europe and to exchange experiences between stakeholders on concrete mid-to-long term public needs that would require the development of new technology solutions. These actions should involve in particular MS' procurement authorities. It is expected that 3 CSAs will be supported for a budget of up to €400 K each.

The LMI was essential in initiating these calls and was fully referred to as the basis for the CIP call. Foreseen cooperation with other planned thematic networks under the umbrella of the LMI will further contribute to the successful implementation of the action.

Action 20: Associate procurers in consultation process for CIP and FP7 calls for proposals

The objectives of these actions have been reached through the www.epractice.eu portal. The eHealth procurers Forum at ePractice.eu is an initiative sponsored by the EC to help practitioners in eHealth procurement in Europe meet and share their experiences and knowledge, ask for advice and provide support. An EC Workshop on Procuring for health benefits was organised at the World of health IT conference in Copenhagen on 6 November 2008. The goal of the workshop was to find out the state of the art and lessons learned in eHealth procurement, in particular in deploying telemedicine services. The action is ongoing. The LMI was the foundation on which this action was built, and it would not have taken place otherwise.

Conclusion

Most of the foreseen activities have been initiated and deadlines have been respected, with no particular need to change or adapt the action plan. It is still too early to notice any market growth as a result of the LMI activities. However, the Commission's efforts to adopt a market-focused approach to eHealth development have been widely welcomed by industry and user stakeholder groups, and by the Member State Contact Group (i2010 sub-group on eHealth).

Overall we can conclude that the LMI has significantly helped with the creation of a favourable political environment for the efficient implementation of eHealth actions. Most of the actions for eHealth had their seed in the eHealth Action Plan (2004), but the LMI has

contributed to the continuity of the eHealth activities and has in some cases played a decisive role in supporting actions. The LMI also contributed to strengthening the focus of the activities in eHealth deployment to the market prospective, which was less visible in the eHealth action plan. It is hoped that the remaining 2 years' activity under the LMI action plan can significantly contribute to market growth and increased employment in the field, despite the difficult economic climate.

7.1.2. Sustainable construction

The construction market provides direct employment to around 17 million persons in construction enterprises and materials and products industry and supports overall about 26 million jobs in Europe. Construction enterprises alone generated a turnover of 1590 billion € and contributed to about 5 % of the EU-27 GDP in 2008. This sector is characterized by a dominance of small and medium sized enterprises, and a very important number of micro enterprises, which produce about 80% of the total turnover of this industry.

Demand in Europe comes from various sources, private households, the business community and the public sector. The public sector dominates demand for infrastructure work. Residential and non-residential buildings are the main volume stream with about 80% of the total EU construction output. Buildings and new infrastructure represents 57% of the total activity. There are however significant differences between countries. On average, construction expenditure per capita is 3 to 4 times higher in EU-15 compared to EU-12 but the growth rates are steadier in EU-12, especially for new construction and infrastructure work.

The construction market is currently facing significant challenges, not only in terms of its influence on energy and climate change, but also in terms of its impact on natural resources (energy, water and materials) and users' convenience and welfare (accessibility, safety & security, indoor air quality, etc.). This is particularly relevant for the existing building stock which has a significant socio-cultural value for the society and at the same time accounts for by far the most carbon emissions and the greatest energy saving potential. *Sustainable construction can be defined* as a dynamic for developing new solutions involving investors, construction industry, professional services, industry suppliers and other relevant parties towards achieving sustainable development, taking into consideration environmental, energy, socio-economic and cultural issues. It embraces a number of aspects such as design and management of buildings and constructed assets, choice of materials, energy use the physical and functional performances of building as well as interaction with urban and economic development and management.

Although, insufficiently coordinated regulations, coupled with a predominantly local business structure, has lead to a considerable administrative burden and a high fragmentation of the sustainable construction market. There is also a lack of knowledge on possibilities within the existing legal framework for using public procurement to facilitate demand for innovation-oriented solutions and the use of a life cycle costs approach which is critical for measuring and assessing the real transformation of the sector toward sustainability. Therefore, this raises a concern about how to better integrate the competencies of specialists' contractors and suppliers into project teams and risk management.

The roadmap presented in the LMI Communication (Annex 1) outlined 11 actions for the period 2008-2011. These actions were articulated around 3 core objectives:

- Making the regulatory and standardisation framework for sustainable construction more coherent
- Developing a culture for innovation and Life Cycle Costing in Public Procurement

- Improving the functioning of the supply and the collaborative environment with customers

The following section provides an overview of the progress to date of each action.

State of play

The main focus so far has mainly been on attracting interest from the Member States and industry to the different proposed actions in order to establish a good foundation for implementation during the remaining implementation phase. This has been made tangible with the setting up of a joint Commission/Member States/Industry “Steering Group”, supported by 3 Working Groups²⁹, to supervise and provide guidance to the actions described in the roadmap. These groups will in principle meet twice a year. While there is a good presence from trade and professional associations in these groups, some efforts are still necessary to ensure a reasonable representation of Member States. Contacts are ongoing with the LMI sub group of the Enterprise Policy Group and permanent representations of Member States in Brussels.

Actions 1 and 3: Screening of national building regulations - Industrial leader panel on cumulative administrative costs/benefits

Both actions have been delayed due to the complexity of undertaking a systemic screening which takes into account the many existing building rules at local level, and to the challenges of identifying enterprises and professionals who could volunteer for the case studies on the cumulative administrative cost-benefits of EU and national legislations. An operational concept was discussed for both actions at the meeting of WG1 on ‘Regulatory Framework and Standardisation’ on 6th April 2009.

Based on this concept, the Commission intends to launch a call for tenders to support the implementation of the actions in 2009-2010. Action 1 will provide a political orientation to more convergence in local building regulations with respect to EU legislation and whether good practice could help this process at regional level. Action 3 presents a concrete approach to understanding the cumulative cost-benefits of a number of legislations and opportunities for simplification, where relevant.

Action 2: Recasting of the Energy Performances of Building Directive

²⁹ Working Group 1 « Regulatory and Standardisation Framework » ; Working Group 2 « Life Cycle Costing and Public Procurement »; WG3 “Strategies for Sustainable Construction”

The proposal of recasting the Energy Performance of Buildings Directive was adopted by the Commission in November 2008 and is now under the first reading at the European Parliament. A common position is not expected before the next EP. The proposal definitely concerns a much wider building stock and stimulates targets that are more ambitious, such as minimum requirements for the energy performances of new and existing buildings at national level. It introduces also an EU-wide benchmarking mechanism.

The new Renewable Energy Directive came in to force in June 2009. Among other measures, it requires Member States to introduce in their building regulations and codes appropriate measures and minimum use requirements to increase the share of all kinds of energy from renewable sources in the building sector.

WG3 'Strategies for Sustainable Construction' could assess the capacity of the construction supply chain to adapt to the requirements of the revised Energy Performance of Buildings Directive and Renewable Energy Directive identify relevant approaches which could stimulate new partnership models with energy services providers in renovation projects. This activity should complement the communication activity 'Build Up' supported by the programme 'Intelligent Energy for Europe'.

Action 4: Guidance and pilot schemes on award criterion and Life Cycle Costing (LCC)

The action has so far focused on the development of a promotional campaign for the use of LCC in public procurement. It revolves around applying an LCC methodological framework developed in a previous study financed by the Commission in 15 public procurement projects, looking at the needs of making current LCC practice by practitioners and contracting authorities more consistent and identifying training requirements.

This preparatory action started at the end of October 2008 and will be completed by end of October 2009. Based on the experience of this preparatory action, the Commission might consider launching an EU-wide promotion campaign focusing more widely on the use of LCC in public procurement, in particular through the LMI public procurement networks (see Action 5). It is expected that this action will provide an input for awareness raising among about 100 contracting authorities.

Action 5: Establish a network between public authorities in charge of procuring sustainable construction

The call for proposals ENT/CIP/09/C/N03S00 envisaged actions to establish networks of public procurement authorities. The aim of these networks is to enable public procurers to improve their knowledge about available innovative solutions, to allow a better coordinated dialogue with suppliers about the future needs and to realise the benefits of European cooperation in exchanging experience in procurement practices. As a result of the call for proposals, two networks of public procurers in the area of sustainable construction will be

funded with a contribution of 1 million € each for a period of 3 years. The networks will start their activities around September 2009.

Attention will be placed on ensuring a multiplier effect of the actions at local level and a clear involvement of the supply chain. These networks are considered complementary to existing public procurement networks dealing with legal and other issues of general interest.

Action 6: Framework, assessment method and benchmarks for the assessment of sustainability performances

At an EU Workshop organised in March 2008 on the topic "A European label for Sustainable Buildings", industry and research institutions gave their views on the research needs to enable sustainability performance targets and benchmarking as a basis for the development of policy instruments and financial incentives. A call for proposals was published in September 2008 (call identifier FP7-ENV-2009-1) with a clear reference to LMI in the priority areas. The call is now closed and proposals are under evaluation. The projects selected will probably run until 2011-2012.

It is felt that the action responds well to the need of a more consolidated knowledge of the assessment of the sustainability performances of buildings which could support the various initiatives of the Commission in the field of standardisation and environmental policies. The various DGs (RTD, ENTR and ENV) coordinated the definition of the call's priority.

Action 7: Widening the scope of European codes for construction design (Eurocodes 2nd generation)

The widening of the scope of the Eurocodes from the current structural design focus to other design criteria related to sustainability requires as a first step an assessment looking at technical issues as well as the modalities for cooperation within standardisation bodies. This initial assessment of the coordination needs is undertaken by the CEN Working Group 206 "CEN contribution to the EU lead market initiative". At the same time, CEN Technical Committee TC 250 "Structural Eurocodes" is currently developing a medium term strategy on the development work needed for the existing standards. Preliminary results should be available during the 4th quarter of 2009. Based on this initial assessment, the Commission will identify, in cooperation with CEN/CENELEC and JRC Ispra, the main steps forward for developing Eurocodes encompassing sustainability aspects.

The action has proven to be based on a correct basis. Only a progressive approach with a clear common understanding of the issues and of the challenges would ensure a commitment from the Eurocodes National Correspondents in all major steps of development, including both horizontal and issue-specific agreements. The modalities of cooperation between the various CEN Technical Committees will clearly stimulate a more integrated approach in the European standardisation work.

Action 8: Construction Products Regulation and sustainability requirements

The Commission's proposal for the Construction Product Regulation brings forward an improved legal framework for simplified procedures to obtain the CE marking for innovative construction products. It is also intended to reduce the compliance costs for small manufacturers or manufacturers having to deal with small series production. Moreover, the environmental concerns were given a prominent place in the proposal, which thus should be seen as enhancing sustainability in a more general sense, as well.

The CPR proposal was presented in May 2008 and is expected to be adopted in 2009/2010 depending on the reaction of the Council and the Parliament. Although this action would have been implemented without the LMI, it is considered that the screening of the building regulations (see Action 1) should take into account the impact of the new essential requirement introduced by the CPR.

Action 9: SMEs guide on collaborative working schemes in construction projects

This action delivered an assessment of the potential benefits of voluntary arrangements such as project partnering, strategic partnering, framework arrangements, consortium and alliance, to the competitiveness and sustainability of the construction sector. Moreover, it provided a framework for a promotion of such arrangements in the EU and 'good practice' guidance which might be used in such promotion, especially for bodies representing the interest of small contractors.

The action was completed in March 2009 and provided recommendations for policy changes which would support the wider implementation of collaborative arrangements. The LMI public procurement networks (see Action 5) could possibly ensure a follow-up to these recommendations. The production and promotion of the guide could be a catalyst for wider change in the European industry which could in turn provide the basis of regular monitoring of the performances and a commitment to different ways of working.

Action 10: Alternative warranty/label schemes related to construction insurance

This action will provide the basis for supporting the promotion of insurance schemes which could stimulate the uptake of innovative and sustainable solutions in construction projects as well as the adoption of responsible management in construction enterprises, in particular in craft and small firms. Due to the pilot nature of the action, the Commission has launched a feasibility study on the extent to which the EU should support the formation and the promotion of such insurance schemes in the Member States.

The feasibility study started in November 2008 and will be completed in March 2010. The preliminary results were presented in April 2009. The pilot nature of the action justifies a progressive approach. A key issue of the feasibility study is to analyze what conditions need to be met in order to enable insurers to accept the risk generated by the innovative technologies and to deliver performance guarantees. A possible output is the development of an “European access code for innovation and sustainability” for insurers and construction practitioners together with the constitution of a body to ensure an efficient implementation of this chart. This would help the insurers to become active players in sustainable development and create new markets and development possibilities for the insurance sector.

Action 11: EU-wide strategy to facilitate the up-grading of skills and competencies in the construction sector

The action has provided an assessment of future needs for skills and competencies in construction enterprises according to plausible scenarios for the development of the sector in the medium term (10-12 years) and the likely effects of the main anticipated technological, economic, environmental and social developments. An appraisal of existing training systems in the Member states and their ability to respond to changing needs has been undertaken. Following the identification and an assessment of a large number of innovative approaches and good practices in the EU, an outline strategy has been developed.

This action was completed in March 2009. The action took into account the specific characteristics of the construction sector and the general approach developed by DG EMPL in similar studies on other industrial sectors. These studies undertaken on behalf of DG ENTR and DG EMPL will provide the basis for a political framework for the development of sectorial strategies. A debate with representatives from the new European Parliament will be organised at the end of 2009.

The Regions of Knowledge (Capacities programme) launched a call in September 2008 aimed to support consortia of clusters that are thematically linked to the Lead Market Initiative. Results of the call can be added in a later stage.

Conclusion

Most of the foreseen activities have been initiated according to the plan. Looking into the future, a possible update of the roadmap would consider giving a more significant push to accelerate the renovation of existing buildings following sustainability requirements, in line with the EU Economic Recovery Plan and included in the Energy Performance of Buildings Directive (EPBD) and Renewable Energy Directives. One of the Working Groups has already launched a discussion about policies on financial and fiscal measures in support of energy efficiency investments in existing buildings and relevant mechanisms to monitor and assess their effectiveness.

The most visible progress concerns the proposals of the Construction Product Regulation (CPR) and of recasting the Energy Performance of Buildings Directive (EPBD), two actions

planned in parallel to the LMI. Other actions relate to the preparation of Life Cycle Costing guidance for procurers, procurer networks, research on performance targets and benchmarking, guidance on partnering in the construction value chain and the development of a strategy on skills and competencies in the construction sector.

The LMI has also been perceived by a number of stakeholders as an opportunity to revitalise the Thematic Strategy on the Urban Environment³⁰ in the area of sustainable construction with a market and innovation prospective. A number of industrial players see the LMI as a possible platform to exchange views about the coherence of the various recent legislative proposals of the Commission concerning construction products and the sustainability performances of buildings, e.g. the CPR, the recasting of the EPBD, the Sustainable Industrial Policy and Sustainable Consumption and Production Package.

³⁰ See Commission Communication, Thematic Strategy on the Urban Environment, COM(2005) 718 final

7.1.3. Protective textiles

The market of technical textiles for intelligent personal protective clothing and equipment comprises clothing and other often textile-based systems and accessories whose main function is to protect the user. These products are used under very different circumstances by different professionals:

- Defence personnel and military forces requiring high levels of specific protection (e.g. nuclear, biological, chemical) for intervention in diverse conflict scenarios or in the event of terrorist attacks.
- Professionals and emergency services in need of protection from health and safety risks arising from activities in hazardous environments or dangerous situations.
- Hospitals or manufacturing environments where insulation from emissions of the human body and of other accessories should provide effective protection from bacterial contamination of patients, health care professionals or the goods manufactured.

The size of the EU market for personal protective equipment products (PPE) is estimated at approximately 8 billion Euros, 85% of it being consumed in the former EU-15. Around 200,000 jobs are directly or indirectly related to the PPE industry in the EU. The turnover of service operations related to PPE in the EU (work wear and healthcare segments) is estimated at 1.5-2 billion Euros, with 35- 40 thousand employees. Since 2000, the world PPE market has been growing at a rate of more than 3.5% per annum. This growth was accelerated recently and it is foreseen that it will remain above the average growth for the 10-15 years to come.

Technological developments originating from high-tech domains such as space industry and military use have a well-known potential to be transferred to the other domains. “Spill over” markets for these innovations exceed largely the size of the original PPE market including non-wearable interior textiles (for buildings or transport vehicles) and consumer products (such as garments for sports, outdoor wear or fashion). Thus, new applications in these fields represent a real potential for an overall extensive market, producing a clear positive impact on the modernisation, competitiveness and structural adjustment of the sector.

The roadmap presented in the LMI Communication (annex 1) outlined 10 actions for the period 2008-2011. In the first year, the actions have progressed as follows:

Action 1: Adoption of the regulation and decision within the framework of the revision of the New Approach to technical harmonisation proposed by the Commission.

Most protective textiles are covered by Directive 89/686/EEC on Personal Protective Equipment, which is supplemented by directives on the protection of health and safety of

workers, in particular Directive 89/656/EEC on the use of protective equipment by workers at the workplace. While this regulatory framework is in general adequate for protective clothing products, an area of concern is the enforcement of existing legislation to ensure that only products providing high level of protection are put on the market. Common rules must be respected both by products manufactured in the EU and by products imported from third countries. However, experience has shown certain deficits in the implementation and enforcement of the Community technical legislation. Under the revision of the New Approach to technical harmonisation, two proposals for reinforced Community policies on market surveillance and accreditation were adopted by the Council and the EP in 2008. Following their adoption, the revision of the PPE Directive was restarted in November 2008 with the aim of having the Commission proposal adopted in late 2010, early 2011. The revision should not cause problems for the protective textiles lead market and the new legislative framework should improve market surveillance irrespective of the sector.

Although this action was not launched because of the LMI, its inclusion in the action plan ensures adequate follow-up and puts protective textiles in the right legislative context.

Action 2: Set-up an information and training platform for buyers and users of protective textiles

The aim of this action is to provide an overview of technical features of the products and IPR protection aspects, to link investors and other protective textiles stakeholders more effectively with a view to establish partnerships, and to create a model for a collaborative PPE innovation platform.

This action has not started yet which makes sense considering that this will consist of industry actions complementing Commission action in the field of public procurement. The scope of the public procurement networks should be clear by summer 2009 and progress from the industry side can be expected from that time. In this respect, it is promising that in the industry road map for the protective textiles lead market, presented on 1 April 2009, such a training platform is foreseen. As noted under Action 3, one proposal in protective textiles was retained following a Commission call for proposals for a network of public purchasers. The project is likely to start in September 2009. The LMI is the driving force behind the action.

Action 3: Establish a network between public authorities in charge of procuring

The public sector is a very significant purchaser of PPE products acquiring functional protective clothing for fire-fighters, emergency services, police forces and the military sector as well as for health care professionals in public hospitals. In certain product groups public purchases attain 100% of purchases. While precise data are not available for protective equipment, a rough estimate of the turnover that public markets represent for the textile and clothing industry is of the order of 10 billion Euros. Public authorities are therefore crucial customers with respect to the development of a new generation of PPE products. There is

however a lack of knowledge on how public procurement can be used for purchasing innovative solutions while respecting the legal framework.

A call for proposals for a network of public purchasers in different LMI areas was published in November 2008 with a deadline for submitting proposals at the end of February 2009. Overall, the action attracted much interest both from contracting authorities and trade associations. A proposal for establishing a network of public procurers in protective textiles has been retained for funding, with a contribution of approximately 1 million € for a period of three years. Depending on the outcome of the call, it needs to be seen if complementary actions by the Commission and/or industry are needed to ensure firstly, multiplier effects at local level and a clear involvement of the supply chain and secondly, the involvement of those countries and products groups that are not covered by the networks.

Actions 4 & 5: Support SME involvement in PPE standards and promote where appropriate the development and use of informal standards for innovative products and services in these market areas

Technical standards are a crucial element in defining concrete performance characteristics and technical specifications to be targeted by manufacturers in order to ensure compliance with European legislation. Such standards should be performance-based and technology-neutral in order to foster innovation. Although harmonised standards for protective textiles have been developed under Directive 89/686/EEC on Personal Protective Equipment, innovative products very often involve added value in the form of new functionalities for which no standards exist. Their maintenance may also require methods for which no standards yet exist.

Therefore, a stronger involvement of textile manufacturers and end-users to drive practicable solutions is desirable, and industry, involving standardisation bodies and national authorities should accelerate the development of new standards in the field of PPE. Alternative standardisation deliverables such as Workshop Agreements (CWAs) and informal standards should also be used more intensively. The participation of SMEs, in particular from the textile industry, needs to be fostered to increase their full involvement in standardisation.

Progress under this action has been slow as it has been difficult to find the right forum to increase the involvement of different stakeholders, in particular SMEs. There has however been some progress in the area of maintenance where the European Textile Service Association ETSA (involved in the protective textiles LMI) has proposed to an ISO Working Group to define simple care label symbols for resistance to industrial laundry. This standard is now at the Draft International Standard stage and should be approved by the end of September 2009.

More progress can be expected in near future as the CEN "PPE sector forum" resumed its activities in May 2009. The forum intends to involve SMEs and users more closely in standardisation work and to look at standardisation needs from a lead market perspective. In addition, industry has also included standardisation in their road map for the protective textiles lead market.

As to placing standardisation higher on the industry agenda, objectives have been met. As to concrete results, progress has been slow. The action plan is, however, the correct basis for action in this policy area.

Action 6: Devise a strategy for an anticipatory approach to products and markets

EU textile and clothing industry is strongly committed to the LMI and, together with the research community and academia, has actively contributed to its implementation. Industry recognises the project as a progression towards stimulating more sophisticated market demand

where EU industry would be in a privileged position in developing a competitive advantage with the potential for expanding these innovations to large spill-over markets.

Accordingly, throughout 2008, industry presented and discussed the LMI in different fora, such as in the technology platform for the future of textiles & clothing and at two conferences on personal protective equipment to gather the views and support of a variety of stakeholders (makers, buyers & end-users of PPE, textile care and rental services, research centres, industry federations, national & European authorities etc.). These efforts culminated in a comprehensive road map for the protective textiles lead market that was presented to the public on 1 April 2009 at the annual public conference of the technology platform for the future of textiles & clothing. In addition to research and technology, the road map covers issues such as public procurement and standardisation which are also part of the protective textiles action plan. Its implementation foresees an involvement of regions and Member States. The road map will form the basis for industry and research activities for the rest of the LMI period and beyond.

Action 7: Increase the knowledge base

Building on European leadership in terms of quality and innovation, the textile industry and the scientific community are developing new advances in the fields of speciality fibres, functionalisation of textile materials and integration of micro-electronic components into smart textiles as well as in production technologies, including prototyping and customisation.

The generation of added value in the area of protective textiles requires a multidisciplinary approach which integrates a great variety of disciplines, ranging from basic material knowledge (chemicals and fibres), advanced chemical and mechanical processing techniques (incl. nanotechnology), nano- or microelectronics to physiological and behavioural knowledge of human actors in hazardous environments. Thus, the development, manufacture and maintenance of innovative protective equipment has become an interdisciplinary challenge that provides fresh impetus and new opportunities for the textile and clothing sector but also for other industries and service sectors.

In response to this challenge to the LMI, a research topic targeting the personal protective equipment and clothing sectors was included under the 2nd call of the Nanotechnologies, Materials and new Production technologies (NMP) theme in FP7³¹. Seven protective textiles related proposals were selected for funding amounting to €21 million. Contract negotiations were finalised in April 2009 and each project will run for several years.

Action 8: Encourage the development of clusters and other forms of local collaboration (incubators, open innovation platforms) involving purchasers and users

³¹ Call identifier: FP7-NMP-2008-SME-2

The textiles and clothing industry is often concentrated in particular EU regions where it plays a vital economic and social role. The regional concentration has often led to clustering. Cluster approaches facilitate a close cooperation between businesses, research communities and end- users. By enabling long term partnerships in developing new materials, manufacturing processes and organisational concepts, clusters provide an opportunity to improve exchanges between companies, technology centres and users. Moreover, clusters offer a platform to overcome resource limitations due to the fragmented structure of industry. National and regional innovation policies could play a significant role by encouraging the development of such clusters.

This is an ongoing action in which support from regional and national authorities is crucial. During the remaining implementation period of the LMI efforts will be increased to get them more involved in the protective textiles lead market. Depending on the success of the ERA-NET³² proposal on textiles which includes a link to the protective textiles Lead Market, joint events aimed at the relevant authorities could be envisaged.

Action 9: Conduct sectoral IPR awareness and support action under CIP

Intellectual property rights in the textile and clothing business in general, and protective clothing in particular, relate not only to technical know-how in the form of patents but also very importantly to copyright on registered and unregistered designs, which are still all too often illegally copied. Procedures for the protection of IPR are often perceived as burdensome by the business community, especially by smaller companies. The promotion of the IPR Awareness action under the Competitiveness and Innovation Programme (CIP) is crucial to overcome the current resource limitations and perception of IPR as a burden among certain manufacturers, public buyers and users of protective clothing and equipment.

This action covers creating a multilingual guide on IPR issues for the textiles & clothing (and footwear, furniture and leather sectors) and awareness-raising seminars aimed at SMEs of these sectors. The guide will be ready in June 2009 and the first awareness-raising seminar is planned for early October. This action was started already before the LMI. However, it also responds to the needs of the protective textiles sector and its success is important for the sector.

Action 10: Improve access to markets of third countries, by means of the ongoing WTO/DDA negotiations and bilateral free trade agreements

The value of the extra-EU PPE market doubles that of the European one, offering possibilities to increase EU exports substantially. The new EU Member States in Eastern Europe, Ukraine, Russia and Asia are the fastest growing areas. The access to markets outside the EU is however often restrained. If market access is improved, EU exports could grow by 50% over the next 5 to 10 years. Efforts to improve market access take place in the context of the

³² The ERA-NET scheme aims to develop and strengthen the coordination of national and regional research programmes.

ongoing WTO/Doha Development Agenda negotiations and bilateral free trade agreements, for which the Council has mandated the Commission to open negotiations.

Conclusion

During the first year, considerable efforts, both from the Commission and from industry, were put into disseminating information on the LMI in general and on the protective textiles lead market in particular in order to establish a good foundation for implementation of actions during the remaining period.

As regards quantifiable results, the single most successful action so far is the inclusion of a research topic targeting the personal protective equipment and clothing sectors under the 2nd call of the NMP theme in FP7. Seven projects on protective textiles were chosen for funding amounting in total €21 million. In addition to purely technical aims, many of these projects have the implementation of the LMI and/or better use of standards among their aims and many include a notable number of SMEs in their project teams. This success and the industry roadmap will ensure that the protective textiles sub-sector will play an important role in the development of the textiles' and clothing sector in the longer future.

During its first year, the LMI succeeded in enhancing the co-operation between (1) representatives of manufacturers, (2) those promoting the correct use of the PPE, and (3) textile rental and maintenance services. The three relevant European level associations have created a task force dedicated to the protective textiles lead market. This has widened the scope of the protective textiles lead market beyond purely technical issues and can only strengthen the competitiveness of the sector in the long run. This co-operation needs to be complemented by also involving the largest buyers of protective textiles, the public procurers. One proposal in the protective textile was retained in the Community call for creating public procuring networks so progress can be expected in this area as well in the next years.

While stakeholders from industry stakeholders have been very much involved in the implementation of the action plan ensuring Member States participation has been somewhat problematic as there are no Commission or Member State groups on protective textiles. Under the circumstances, the logical and the fastest solution was to use the Political Mirror Group of the Technology Platform for the future of textiles & clothing as a consultancy group. The Political Mirror Group consists of representatives of 15 Member States and was created to improve the coordination of national and regional research policies in the textile & clothing sector and is therefore a suitable forum to discuss also the protective textiles lead market. Members have been asked to nominate contact points at national/regional level for different lead market policy measures (standardisation, public procurement, research, industry networking, and education & training). During the recent months, other Member States have shown interest in participating and nominated representatives. To take advantage of this momentum and to get the Member States more involved in the implementation of the action plan, a meeting with them will be organised in autumn 2009 together with the industry task force. Depending on the success of the ERA-NET proposal on textiles, the involvement of the ERA-NET consortium will be examined.

All in all, the action plan has been the correct basis for action in the protective textiles' lead market and no major revisions are necessary. During the rest of the implementation period efforts will focus more on the involvement of Member States and on achieving progress in the area of standardisation.

7.1.4. Bio-based products

The Bio-based Products Lead Market covers a broad range of intermediate products, product components, and ready-made products, e.g. bio-plastics, bio-lubricants, bio-fibres for textiles, composite materials for construction and automotive, chemical building blocks, enzymes, and amino acids. Biological raw material from plants and trees, or waste, is renewable in the short term (less than 10 years), as opposed to fossil material that is renewable in 10 million years. Bio-based products can thus make a sizeable contribution to CO₂ reductions.

There are already several bio-based products on the market in Europe; for instance, the chemical industry currently uses 8-10% renewable raw materials to produce various chemical substances. In other market segments, the market shares for bio-based products are still very low. Europe has a few small companies specialised in bio-based products and several major chemical companies developing bio-based applications.

The aim is not simply to replace fossil oil, but to provide bio-based products with specific innovative properties that have advantages over other products. For example, in sensitive environments, hydraulics and chains can use biodegradable lubricants that are non-toxic to soil and water.

The Action Plan presented in Annex I³³ to the LMI Communication³⁴ outlined six actions for the period 2008-2011. The Commission's Task Force on Bio-Based Products issued the report *"Accelerating the Development of the Market for Bio-based Products in Europe"*³⁵, which describes the action plan in more detail.

Action 1: Establish an advisory group, including Member States and industry

In 2008, the Commission set up an expert group composed of representatives from national governments, industry and academia, entitled the Ad-hoc Advisory Group for Bio-based Products. It has analysed the current market conditions and how the legislative framework affects the introduction of products made from renewable raw material.

The Advisory Group has become functional and started to perform its work successfully in an extremely short time (six months) considering the size of the task. It is the first time that a cross-disciplinary expert group has been set up at European level to discuss on renewable raw

³³ See Commission Staff Working Paper, Explanatory Paper on the Lead Market Approach: Methodology and Rationale," SEC(2007) 1729 (final 21.12.2007)

³⁴ COM(2007) 860 final

³⁵ See action plan: http://ec.europa.eu/enterprise/leadmarket/biobased_products.htm

materials as well as bio-based products. It is apparent that its mixed composition has given the group a great dynamic that is reflected in the quality of its work.

Action 2: Analyse the impact of legislation and policies

Bio-based products are affected directly or indirectly by a large number of legal acts and public policies at EU, national or even local level. The Ad-hoc Advisory Group for Bio-based Products has analysed the impact of existing legislation and policies on products made from renewable raw material. The analysis has focused on all the different steps in the production chain: the provision of renewable raw materials, the production of intermediate materials and components and the manufacture of assembled products, the consumption, and finally the disposal of the product as waste.

This analysis is complicated for two reasons: many legal acts at different levels influence the manufacture, sale and disposal of bio-based products; and bio-based products are not one uniform product group, but a broad range of products with completely different characteristics, qualities and uses.

The Advisory Group will later in 2009 issue recommendations, e.g. in the following areas:

- Policies promoting market development;
- Coherence of legislation on waste, recovery and recycling related to bio-based products and in comparison with others;
- Ensure that biomass-related legislation encourages a sustainable use of biomass for bio-based products.

Action 3: Establish a network between public purchasers of bio-based products

A CIP call for proposals³⁶ for the development of public procurement networks was launched in November 2008 with a deadline for the submission of proposals in February 2009. Unfortunately, no proposal linked to bio-based products achieved the threshold for funding.

This further underlines the urgent need to develop European standards for bio-based products so as to underpin future actions such as an exchange of practices between contracting authorities.

Action 4: Encourage Green Public Procurement for bio-based products

The potential for increasing demand for bio-based products through public procurement is huge, as European public authorities spend almost €2000 billion, or 16% of GDP, on goods

³⁶ ENT/CIP/09/C/N03S00

and services yearly. Almost all product areas could potentially feature products made entirely or partly from renewable raw material. Likewise, the production of almost all types of services could potentially benefit from bio-based inputs.

By introducing requirements for *environmental sustainability* in tender specifications, the demand from public authorities could significantly increase the market for green products and drive technological innovation. Member States have given political support to an increase in Green Public Procurement (GPP). However, the improvements have to be accomplished through action at the national, regional and local level. The difficulty in providing an inventory of public procurers at all different levels makes it inefficient to rely only on a bottom-up approach;

The Green Public Procurement Guidelines now include criteria that allow bio-based products to be given preference in tender specifications. The European Commission cooperates with Member States and stakeholders to set common GPP criteria for endorsement in national action plans. The fact that a product is bio-based is not alone a proof of its environmental sustainability; a range of other factors need to be considered (e.g. health, safety, environmental effects, waste).

By integrating the *requirement for bio-based content* with other common GPP criteria and by applying the *EU Eco-label* to products complying with a minimum level of bio-based content set for that product category, public procurers are able to distinguish the products that should be eligible for preferential selection.

National GPP programmes can have a significant effect on the uptake of bio-based products. For instance, the Netherlands have legislated that 100% of the procurement should select environmentally sustainable goods and services. Although this should lead to an increased demand for bio-based products, the buyer may lack essential information:

- Is there a bio-based alternative available on the market?
- Is the performance as good as that of similar products?
- Is there a suitable European standard for bio-based products?
- Have the environmental claims been certified?
- What is the minimum level of renewable content to call the product "bio-based"?
- How to compare recycled material with bio-based material?

The Advisory Group will later in 2009 issue recommendations, e.g. in the following areas:

- Encourage contracting authorities in all EU Member States to give preference to bio-based products in tender specifications
- Ways to verify bio-based content claims
- Develop a list of product groups and designated bio-based products
- Set a minimum level of bio-based content for each product group
- Ensure international harmonization of policies to promote GPP

The development of Green Public Procurement Guidelines is not a result of the LMI, but the lead market initiative provided an impetus to ensure that "bio-based" become part of the common criteria. The coming recommendations aim at filling the gaps in current GPP policies and help to speed up the demand for bio-based products.

Action 5: Standards, labels and certification

a) Elaborate new European standards for bio-based products

The Commission has identified that there is a lack of suitable European standards for bio-based products, in particular for the *determination of bio-based content* as well as other *products capabilities* including *functionalities*, the *evaluation of environmental impact*, and a number of other purposes.

The absence of standards effectively hinders the market uptake of bio-based products, both on consumer markets and in public procurement. To address this shortcoming, the Commission has in 2008 issued two standardisation mandates for bio-based products:

Mandate 52/2008 for the programming of standards for all types of bio-based products:

The programming mandate aims at producing a review of already existing European standards on all types of bio-based products, identifying needed pre-and co-normative research and proposing a work programme for the elaboration of standards which will guide future decisions, including possible future Commission mandates. CEN's indicative timeline is mid-2010.

Mandate 53/2008 for the rapid elaboration of pre-standards for bio-lubricants and bio-polymers:

The standardisation mandate calls for European standards to be developed immediately for bio-lubricants and bio-polymers. Technical Specifications will first be prepared as an interim output and those will later be converted into full European Standards (ENs). The European standards should cover the following aspects:

- biodegradability (for bio-lubricants only),
- product functionality,
- impact on greenhouse gas emissions and raw material consumption,
- measurement methods, test methods, and Life Cycle Analysis procedures.

CEN has accepted the two mandates and integrated the work into existing Technical Committees and Working Groups, which will allow for efficiency gains and better coordination. The Technical Specifications on bio-lubricants and bio-polymers are planned for publication by mid-2010.

The Advisory Group will later in 2009 issue recommendations, e.g. in the following areas:

- Exchange of information between stakeholders on key issues to be covered by the standards for bio-based products;
- Contribution to the harmonisation of various standards across product groups and sectors.

The Commission mandates to CEN and the subsequent standardisation work are direct results of the LMI action plan.

b) Develop a common methodology for Life Cycle Assessment (LCA)

The European Commission services (DG Environment, DG Enterprise and DG Research) and the Joint Research Centre are currently developing a guidance handbook for good practice in Life Cycle Assessment³⁷. It will be of high relevance to bio-based products: as long as there are different ways to calculate the life cycle cost, it will be impossible to make a fair comparison of different products and their real impact on the environment.

Amongst the other important tools, the recently completed CALCAS project³⁸ which was reviewing the basic current paradigms of LCA in order to overcome its present limits was instrumental. It is also important to take into consideration methods for environmental/sustainability assessment already in practice in the industry (e.g. International Environmental Product Declaration³⁹; Eco-efficiency analysis⁴⁰, environmental analysis based on ISO 14025⁴¹).

The Advisory Group will later in 2009 issue recommendations, e.g. in the following areas:

- Encourage the development of a common methodology and common LCA criteria for bio-based products;
- Propose activities leading to suitable normative documents for LCA methodology related to bio-based products, e.g. European guidance documents, technical reports, standards, etc.

c) Labelling and information to consumers

The benefits of bio-based products need to be communicated to consumers, in order to build a positive image. European consumers are increasingly making purchasing decisions based on ethical or environmental considerations. New buying patterns give signals to retailers and manufacturers that factors other than quality and price are important.

³⁷ "International Reference Life Cycle Data System (ILCD) Handbook" available on: <http://lca.jrc.ec.europa.eu/EPLCA/deliverables.htm>

³⁸ www.calcasproject.net

³⁹ www.environdec.com/pageId.asp

⁴⁰ The following websites provide further information; www.basf.com/group/corporate/en/sustainability/eco-efficiency-analysis/index and www.dantes.info/Tools&Methods/Environmentalassessment/enviro_asse_EcoEff.html

⁴¹ www2.ademe.fr/servlet/list?catid=17517 and www.iso.org/iso/fr/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=38131

Product labels should give clear and reliable information about the environmental performance of bio-based products. Wild claims and a growing thicket of "self-made" labels need to be counteracted. This depends on the availability of European standards. The existing European Eco-label should be used as far as possible.

The **European Eco-label** now also covers bio-based products in various product groups (e.g. lubricants, detergents, plastics). The label sets environmental requirements for products on the basis of the net environmental balance between the environmental benefits and burdens, including health and safety aspects, at the various life stages of the product⁴².

Two important issues are (i) to stimulate the use of the European Eco-label for products made from renewable raw material, and (ii) to inform consumers about the meaning of the label.

An obvious problem is that there are many different "eco-labels" used in the EU Member States and that the definitions and certification procedures differ widely⁴³. Consumers are generally better aware of their national label than the European. Thus, there are significant efficiency gains in promoting a harmonisation of the eco-labels in the medium term.

The Advisory Group will later in 2009 issue recommendations, e.g. in the following areas:

- Suitable labels for bio-based products
- Harmonisation of labelling and common criteria for bio-based products

d) Develop a methodology for information about sustainability of biomass production

The Commission's Joint Research Centre and projects supported under the European Framework Programmes of Research have initiated work on developing a methodology for collecting information about biomass production at farm level. This information will be used to evaluate the total environmental impact of the renewable raw materials used in the production of bio-based products. Thus, the evaluated data can be used in a LCA to make a comparison of products.

More results of the project "Whole Farm Geo-Traceability Concept" will be published when the project reaches its interim stage.

Action 6: Complementary actions for bio-based products

⁴² http://ec.europa.eu/environment/ecolabel/index_en.htm

⁴³ Bio Intelligence Service for ADEME (French Environment and Energy Management Agency): "Quality marks and labelling of products that incorporate renewable raw materials – evaluation of needs and comparison of existing methods promotion of bioproducts and biomaterials – summary report", December 2007.

a) Conduct an information campaign via different media with focus on SMEs

The strategy for bio-based products includes increasing the visibility of bio-based products by emphasizing their benefits, special capabilities and showing that their availability on the market.

Before any information campaigns aimed at consumers are launched, it is necessary to put in place a transparent technical framework for evaluating bio-based products and verifying their capabilities objectively. This consists of standards and certification procedures. Firstly, European standards for measuring bio-based content and the environmental impact of products must be in place. Secondly, an agreement on a suitable and informative product label is needed. Thirdly, an overview on the market availability of bio-based products is required. A future information and communication programme requires these elements to be successful.

Currently, it is too early to consider launching an information campaign. The Commission will come back to the issue at a later stage.

b) Eurobarometer survey

A regular Eurobarometer survey will in 2009 include questions on the public perception of bio-based products. The report will be available in the autumn of 2009.

c) Mapping of bio-refineries in Europe

The action plan for bio-based products indicates that the Commission and stakeholders should *promote the establishment of strategically important bio-refinery pilot plants and demonstrators involving all actors and investments at EU, national and regional level.*

As part of the Bio-based Products Lead Market, a mapping of existing bio-refineries at pilot plant or demonstrator scale in Europe has been carried out and the results per country have been published on a web site⁴⁴. The mapping has been made possible with the help of FP7 funding and was carried out in collaboration between EuropaBio and the Commission's two expert groups COMP-BIO-NET and KBBE-NET⁴⁵. The internet site www.bio-economy.net will be successively developed as more information is gathered.

The mapping covers both existing bio-refineries and related public policies in the EU Member States. It can be used as a tool to promote the production of various bio-chemicals and bio-

⁴⁴ http://www.bio-economy.net/bioeconomy/member_states/index_bioeconomy_member_states.html

⁴⁵ Competitiveness in Biotechnology Network (COMP-BIO-NET) and Knowledge-based Bio-Economy Network (KBBE-NET)

materials. Up to this point, there was no harmonised information on how many installations are already up-and-running in Europe.

It was initially assumed that significant amounts of financial resources would be needed to set up new bio-refineries and increase output volumes. However, the mapping shows that there are many facilities already available, while others are currently in the process of being established, and this knowledge should be used to pool resources and set up collaborative projects.

The mapping of bio-refineries was initiated in response to the LMI action plan.

d) FP7 joint call for biorefinery research

In the autumn 2008 a joint call under the Seventh Framework Programme for Research and Technological Development (FP7) was published, which invited the research community to put forward proposals for research on biorefineries and related technologies.

It will provide funding to projects aimed at developing inter alia second-generation bio-chemicals from ligno-cellulose (wood, straw, etc) which is a vital instrument to produce larger amounts of bio-chemicals at a lower unit cost. It will also enable biorefineries to use non-food plants and trees for industrial purposes, thus decreasing the risk of conflicts between food and non-food production in agriculture and forestry.

Shortlisted applicants for the first stage of a Collaborative Project topic are preparing detailed proposals for the second stage of the call, which will close on 5 May 2009. Negotiations are expected to start in September 2009. Successful applicants of the Coordination action topic have been invited to negotiations.

More details on the results of this call will be provided in the next progress report on bio-based products.

Conclusion

The LMI has proven to be a useful approach to tackling the barriers to market entry that novel technologies or products may face. As bio-based products are not one uniform product group, but a range of products with different characteristics and uses, the LMI helps to ensure coherence of measures aiming to address demand-side problems with rules and regulations that govern the manufacturing process from raw material to ready-made product.

The involvement of external stakeholders has made the process more dynamic and generated many new proposals that can help bio-based products become competitive. However, an advisory group with representatives from national governments, universities, and industry, will not necessarily agree on all scores. Whereas one part of industry is enthusiastic about

developing new bio-based products because they see new business opportunities, another part of industry is more cautious about policy measures that stimulate an increase in the market share for bio-based products. A deepened reflection on the causes for this is needed.

The action plan for bio-based products has been found to be very relevant and well-balanced. The current task is to make each action item more detailed so as to step up implementation in the coming years. It is also necessary to bring together the concerned parties and make them work together, i.e. Member States' institutions, academia, industry, and civil society.

It is estimated that the successful launch of the European standardisation work on bio-based products is a key achievement, since the other action items depend on the availability of European standards.

7.1.5. Recycling

The Lead Market Initiative in recycling aims to boost markets for technologies, products and processes relating to the recycling and re-use of products and materials. Recycling is of strategic importance for the EU since it helps reduce consumption of natural resources, reduces energy use, and reduces waste going to landfill. Recycling can also provide EU production industry with needed materials as well as critically needed metals and minerals. Despite obvious business potential, environmental benefits, and progress to date in recycling certain materials, the area can be further boosted in order to operate on greater scale. Greater re-use and recycling can lead to Europe developing a competitive advantage and is an essential element in the shift towards a resource efficient economy. Recycling provides also very tangible reductions in energy production compared to extraction of raw materials. It is estimated that roughly 0.75% of EU GDP corresponds to waste management and recycling.

A mix of policy measures have been put into place. These are mainly designed to stimulate demand mainly through target setting in legislation and green procurement, but also include financing of innovation in recycling processes and technologies.

Policy measures:

Action 1. Adopt the Waste Framework Directive

The Waste Framework Directive (WFD) was adopted by the Council on October 21, 2008. The WFD sets targets to the targets for the EU on household waste (50%) for 2020 and for construction and demolition waste (70%) for 2020. The WFD will act with significant force to boost improved waste management, greater recycling, and will help foster and support underpinning markets. The new Directive simplifies and modernises current EU waste legislation, i.e. clarifying the notions of recovery, disposal, end-of-waste status and by-product or defining the conditions for mixing hazardous waste. The Directive contributes to legal simplification by repealing the current waste framework directive (2006/12/EC), the directive on hazardous waste (91/689/EEC) and part of the directive on waste oils (75/439/EEC).

The responsibility for the implementation of the WFD is shared between the European Commission and the Member States. While Member States must design and implement waste prevention programmes, the Commission is set to report on progress concerning waste prevention. The LMI depends on a solid basis of waste and recycling legislation.

Further actions will be taken to support the implementation of the Waste Framework Directive, in particular dealing with market related issues, by organising events for MS, industries and stakeholders.

Action 2. Review the relevant waste directives

A number of Waste Directives have been undergoing review. The European Commission has proposed a revision of EU legislation on electrical and electronic waste on December 3rd, 2008, including new national collection targets, increased recovery and recycling targets and a reinforcement of the producer responsibility principle. The proposal consists of a recast electrical and electronic waste directive (WEEE, COM (2008)/810) and directive placing restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS, COM (2008)/809). Both proposals will be debated by the European Parliament and the Council in 2009.

The revision addresses technical, legal and administrative difficulties with the existing rules. These difficulties have resulted in unintended costs and burden on market actors and administrations. The most significant change is to scrap the annual national WEEE collection target of 4 kg per inhabitant. Instead "producers or third parties acting on their behalf" would have to collect at least 65% by weight of WEEE products placed on the market. The new collection target will apply from 2016, but Member States can apply for a time-limited derogation. Both proposals also aim to harmonise related rules on the restriction of hazardous substances in WEEE. The Commission proposes setting the scope of both directives in the RoHS law. The LMI has been important in encouraging market issues to be more fully considered in revisions.

Action 3. Inform European procurers on green public procurement

As part of the Sustainable Consumption and Production Package, a communication on Green Public Procurement has been published on July 16, 2008. It describes how procurement creates important demand for greener goods and environmentally friendly products and services. By doing so, it will also provide incentives for companies to develop environmental technologies; which can also include technologies for recycling processes. The communication identifies 10 priority areas for procurement. Future work will include the development of common GPP criteria for these areas; these criteria may include whether goods are of recycled origin.

Future activities may include:

- Measures to stimulate **demand for recycled materials**; with a focus on specific materials such as: **plastics, secondary aggregates/slag, or compost**. This would include considerations of standards, labelling and procurement. Further decisions on these areas would be guided by environmental gains that can be made and with reference to the Waste Hierarchy.

- Measures for stimulating **demand for eco-innovations in recycling, and related technology and equipment**. This would include, for example, the promotion of effective public and private procurement actions in Member States

Action 4. Support the exchange of best practices across Member States

As part of the implementation of the ETAP (Environmental Technologies Action Plan) and CIP (Competitiveness and Innovation Programme), a call for proposals has been launched in December 2008 (as part of the Pro-Inno Europe initiative), designed to enable exchange and take-up of good policy practice across Member States. The closed February 12th, 2009. DG Environment together with DG Enterprise is in the process of setting up an evaluation committee to evaluate the call proposals. The evaluation committee has gathered in March 2009. The signature of the contract with the winning consortium is foreseen for June 2009. The Budget is 3 M€ for 3 years, with a maximum Community contribution of 95%. To further support this work, actions will be established to identify and encourage take-up of good policy practice in the Working Group on Green Public Procurement and the Working Group on Waste Management and recycling.

Action 5. Establish a network of public procurers

A call for proposal for the establishment of Public Procurement Networks in support of the Lead Market Initiative has been launched, funded by the CIP. No proposal dealing with the recycling sector was submitted which may indicate the lack of awareness of public procurers in this area about the Lead Market Initiative.

Future activities may include:

- Measures for stimulating **demand for eco-innovations in recycling, and related technology and equipment**. This would include, for example, the promotion of effective public/private procurement actions in Member States, as well as specific funding initiatives to stimulate demand for such eco-innovations, or certification schemes for recycling facilities or specific technologies.

Action 6. Boost the resource productivity to create more value with less resources

Resource efficiency contributes to the goal of decoupling environmental impacts from economic growth⁴⁶. It means creating more value while using less resources, and for which recycling plays key role: being resource efficient means in effect being able to recycle to a large degree. Recycling also represents huge energy efficiency gains, an area highlighted in the Commission Economic Recovery Action Plan. Resource productivity (measured as GDP per resource use, €/kg has improved 2.2% on average annually in the EU over the past 10 years. The Sustainable Consumption and Production Action Plan, aims to ensure that improvements in resource productivity should continue at least at the same pace as this average. Tools will be developed to monitor, benchmark and promote resource efficiency.

⁴⁶ Thematic Strategy on the Sustainable Use of Natural Resources, Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, (COM (2005) 670)

The revised Ecodesign Directive⁴⁷ provides a framework for setting compulsory minimum requirements and voluntary benchmarks for energy-using products. All energy-related products – that do not consume energy during use but have an indirect impact on energy consumption – will also be covered in future. Mandatory labelling will indicate relevant environmental parameters for a wider range of products, including energy-using and energy-related products. EU Ecolabel scheme, which indicates the most environmentally friendly products on the EU market, will be extended to cover a wider range of products and services, such as food and drink products, and made less costly and bureaucratic. These changes will make the scheme more attractive to manufacturers and encourage them to innovate and offer more such products. With a view to promoting leaner production, the proposals foresee:

- Developing targets and tools to monitor, benchmark and promote resource efficiency and eco-innovation. An Environmental Technology Verification scheme will be established, to support eco-innovation through increased confidence in new technologies.
- Revising EMAS, the EU's voluntary eco-management and audit scheme, to increase its uptake, notably among SMEs, by making participation less costly and involving organisations outside the EU.
- Developing an industrial policy for eco-industries by first analysing the barriers to their expansion and to their full uptake by other sectors.

Setting **inspirational targets** is an effective way of boosting resource efficiency and has a direct consequence on promoting of reuse and recycling. Setting targets will be explored with various stakeholders. The published (November 2008) Communication on Raw Materials will also seek to promote resource efficiency and it will be important to advance work on benchmarking and target setting in this context as well.

Future activities may include:

- Measures to stimulate the **recyclability of the products** and the **integration of recycled materials into products**; for example, the development of minimum requirements and criteria in the context of the **eco-design directive**, which will be supported by studies and the possible development of related standards.

Action 7. Define End-of-Waste Criteria in the Waste Framework Directive

The Waste Framework Directive provides definitions of terms relating to waste and in particular when a waste ceases to be a waste (and is considered a recovered material). This is important for recycling, as providing clear and effective criteria for when a material ceases to be a waste can promote the recycling and re-use of a particular waste stream. The Waste Framework Directive foresees implementing measures to set end of waste criteria for specific

⁴⁷ On 16 July 2008, the Commission proposed a recast of the Ecodesign directive 2005/32/EC that established a framework for the setting of ecodesign requirements for energy-using products.

waste streams, in particular for aggregates paper, glass, metals, tyres and textiles. These would then effectively form sets of standards for each waste stream. The Joint Research Centre in Seville has been proving background knowledge to go towards defining such criteria and associated methodologies. Pilot studies on specific waste streams have been carried out (compost and metal scrap) as an Administrative arrangement with the JRC. This work will be extended in the future to other waste streams. In the longer term such criteria will further promote recycling over other forms of recovery.

Action 8. Improve knowledge about standards used

The Packaging and Packaging Waste Directive (94/62/EC) covers all packaging placed on the Community market and all packaging waste. Packaging has to comply with the Essential requirements as defined in an Annex to the Waste Framework directive. These requirements foresee that, amongst others, packaging must be recoverable whether it is reusable or not (either in the form of material recycling, energy recovery or organic recycling). A study is being launched to evaluate compliance to the Essential Requirements. Information provided shows that most of companies (about 65%) are using the CEN standards, other companies have developed their own internal procedures not based on the CEN standards (about 12%) and some other companies (about 24%) have no procedure yet. Standards play an important role in setting a level playing field for competition and it is important to understand how standards relating to recycled plastics are being complied with in practice in Member States. The study should highlight what is happening in practice as regards recycling standards in Europe and the extent of the use of the CEN standards. Contacts with CEN has been set up.

Action 9. Publish a Communication on Raw Materials

The published (November 2008) Communication on Raw Materials aims to satisfy key needs of EU industry for raw materials. Raw materials supply the basis input to production processes and security of supply is thus key to competitive position of EU industry. Boosting EU resource efficiency (reduction of material use in products or production processes, and reuse, and recycling) will play an important part of this initiative. Many of the materials needed by EU industry can be increasingly obtained through recycling and recovery. Currently in the EU significant proportions of waste are still being sent to landfills or only partially recovered. For example 41% for the EU copper usage comes from recycled sources. However for many other metals, particularly for those needed for high tech material these rates are much lower. A number of actions to boost recycling and ease access to *recycled materials* to EU industry are laid down in the forthcoming Communication. Work on the recycling aspects will be closely coordinated across the Raw Materials Initiative, The Lead Market Initiative and developments on Recycling Markets.

Future activities may include:

- Work will also look at **international market aspects** with respect to international trade and the flows of recycled materials out of the EU, and the Waste Shipment Regulation. This work will be carried out in close cooperation with the "**Raw Materials Initiative**", where attention will be given to materials identified as "critical".

Action 10. Set up eco-innovation projects in recycling

A call for proposals was launched in April 2008. One of the priority areas focused on recycling, in particular:

- Better sorting processes and methods for waste materials, construction waste, commercial/industrial waste, potential recyclables or waste from electrical and electronic equipment and end-of-life vehicles.
- Innovative products using recycled material or facilitating recycling, matching international products' standards, advanced design requirements and high quality consumer needs.
- Business innovations to strengthen the competitiveness of recycling industries, such as new market structures for recycling products, supply chains or harmonised manufacturing and recycling processes.

The deadline for receipt of proposals was 11 September 2008 and evaluation of proposal was carried out in the latter part of 2008. The total budget earmarked is in the order of 27 million Euro. 134 proposals were received. An important proportion of proposals received were in the area of recycling. The call succeeded in addressing the SME sector, with 74% of the 444 participants representing the sector.

The evaluation of the proposals has now been concluded with 40 projects recommended for funding, with roughly 50% coming from the recycling field. The submitted proposals focused on new recycling processes and technologies (around 2/3 of proposals, mainly sorting methods, recovery of materials, collection methods) and new products from recycled materials (around 1/3 of proposals, mainly tyre waste and new cleaning materials).

A similar call for proposals will be launched in May 2009. The LMI has been successful in influencing funding decision under existing programmes.

Action 11. Set up observatory on eco-innovation in the field of Recycling

The aim of the Networked Observatory on Eco-innovation is to collect and analyse information on trends in the area of eco-innovation and provide a strategic knowledge resource for policy-makers, business and finance. Part of the specification for the observatory will include support to the further implementation of the Environmental Technologies Action Plan and to the Lead Market Initiative, including the following market areas:

- sustainable construction
- recycling
- bio-based products.

A call for proposals of the Competitiveness and Innovation Programme⁴⁸ (Europe INNOVA) has been launched to set up observatory and support its activities during the first years (the call closes February 12th, 2009) within the framework of the Europe Innova initiative. The observatory will be launched in June 2009, with a grant agreement of €2.0 million over three years.

Action 12. Encourage research and development in Recycling

A number of applied research and development activities have been taking place. This follows from calls for proposals on waste Management and recycling under the 7th Framework Programme. Projects will develop advanced automatic sorting systems on paper and plastics. Another project will develop an advanced system to produce ceramics from waste tyres and glass. Another project on industrial ecology would deal with issue of Construction and Demolition waste. The total EC contribution is estimated at just over: 15 M € broken down roughly as follows:

Plastics automatic sorting: 2.8 M €

Paper automatic sorting: 2.8 M €

Industrial Ecology: 6.1 M €

High added value from waste: 3.3 M €

The Regions of Knowledge (Capacities programme) launched a call in September 2008 aimed to support consortia of clusters that are thematically linked to the Lead Market Initiative.

Future activities may include:

- Focussed support measures, such as the organisation of events with Member States, industries and stakeholders; such as on the implementation of the Waste Framework Directive, in particular dealing with market related issues; the clustering of funded projects under LIFE, Research or CIP;

Action 13. Set up guidelines on state aid for eco-innovation and waste management

Environmental guidelines for state aid were published in the Official Journal April 1st, 2008. These Guidelines lay down the conditions for authorising the granting of state aid to address areas which lead to a sub-optimal level of environmental protection. The guidelines have specific features that are relevant to promoting markets in recycling. In particular to topics of eco-innovation and waste management are areas for which Member States will be able to give aid in the form of subsidies to business and public authorities. This covers areas such as waste management, waste reduction, re-use and recycling of waste materials, etc.

⁴⁸ Call reference CIP EuropeINNOVA-ENT-CIP-09-C-N01S00

Action 14. Improve understanding of market conditions in Recycling

A study titled "Optimising Recycling Markets" was launched in early 2008 by DG Environment. This focuses on market conditions in the recycling area, including focus on specific waste streams: Cardboard, PVC, Batteries and Food Waste. Case studies focussed on six Member States in the EU: B, UK, F, EST, PL, and ES. Outcomes will be important for developing a better understanding of market conditions in the recycling area. The final report outlines the policy options that would be best in removing barriers in markets for recycling; these mainly include:

- Optimising logistics in collection phase
- Elaboration end-of-waste criteria for specific waste streams
- Increasing producer responsibility
- Disseminating good practice

The report has fed into the Communication on waste & recycling markets that has been presented to the Environment Council (March 2nd – 3rd, 2009).

Future activities may include:

- **Specific studies**, such as economic instruments to promote markets such as the inclusion of the waste and recycling sectors into the ETS.

Action 15. Facilitate research on future policy developments

A Framework Contract launched by DG ENV for studies to support policy development. This will assist in the reviews of the Thematic Strategies on the Sustainable Use of Natural Resources and on Prevention of Waste and Recycling, due in 2010. Similarly, the revised Waste Framework Directive requires the Commission and Member States to propose strategies for waste prevention by 2011. These will require extensive assessment of work done to date as well recommendations for future policy developments in the area, against the background of the policies mentioned above. This will include:

- Analysis of progress to date in the EU and worldwide
- Evaluation of the effectiveness of current policies and their implementation;
- Prospective analysis and support for future policy development.

The evaluation of the Framework Contract will take place in March 2009. Studies are likely to be launched later in the year

Conclusions

The current economic downturn has highlighted problems faced by the recycling markets in the EU. The fall in demand for recycled materials has been particularly hard. Based on a Commission non-paper, the Czech Presidency presented a report during the Environmental Council March 2nd – 3rd, 2009 on obstacles to the creation of robust and stable waste & recycling markets across the EU.

The LMI has been helpful in coordinating and giving an emphasis to recycling markets. In particular, the LMI has had influence on the preparation of:

- Analysis of Recycling Markets due to economic downturn
- Articulation of 3rd Pillar of the Raw Materials initiative.
- Further promotion of markets aspects into recycling policies.
- Adoption of the Waste Framework Directive; end-of-waste criteria which are now under development,
- Over 15 million euro of innovation projects to be funded in the area of recycling.

As part of the mid-term review a strategic assessment of the initiative was carried out. Up to now the scope of the Lead Market in recycling has been broad. However, in the future it would be beneficial to focus on very specific areas, with the specific aim of stimulating **demand**.

These are outlined as follows:

- **Measures to stimulate demand for recycled materials;** with a focus on specific materials such as: **plastics, secondary aggregates/slag, or compost**. This would include considerations of standards, labelling and procurement. Further decisions on these areas would be guided by environmental gains that can be made and with reference to the Waste Hierarchy.
- Measures to stimulate the **recyclability of the products** and the **integration of recycled materials into products;** for example, the development of minimum requirements and criteria in the context of the **eco-design directive**, which will be supported by studies and the possible development of related standards.
- Measures for stimulating **demand for eco-innovations in recycling, and related technology and equipment**. This would include, for example, the promotion of effective public/private procurement actions in Member States, as well as specific funding initiatives to stimulate demand for such eco-innovations, or certification schemes for recycling facilities or specific technologies.

- Work will also look at **international market aspects** with respect to international trade and the flows of recycled materials out of the EU, and the Waste Shipment Regulation. This work will be carried out in close cooperation with the "Raw Materials Initiative", where attention will be given to materials identified as "critical".

- **Focussed support measures**, such as the **organisation of events** with Member States, industries and stakeholders; such as on the implementation of the Waste Framework Directive, in particular dealing with market related issues; the clustering of funded projects under LIFE, Research or CIP; or **specific studies**, such as economic instruments to promote markets such as the inclusion of the waste and recycling sectors into the ETS.

The relevant actions of the action plans are updated accordingly.

7.1.6. Renewable energy

The renewable energy market in Europe in 2005 generated a total gross value added of 58 billion Euros and provided direct employment for around 1.4 million persons. The renewable sector comprises different technologies which are in different stages of development and which require not only a general policy framework approach but also targeted sectoral actions which take into account the technological maturity of each product. It is estimated that by 2020, the RES sector will count for 2.8 million jobs⁴⁹.

The demand for renewable energy is significantly policy driven. Key legislation, in particular the climate change and energy package including the Renewable Energy Sources Directive (RES), is now in place and provides a stable policy framework within the EU and for the Member States. On the technology side, the Strategic Energy Technology Plan (SET) focuses on enhancing efforts for technological development within the sector. The stability of the regulatory system is an important factor in reinforcing investor confidence.

Over the last decade efforts of the EU and Member States, notably for wind and solar, have contributed to the rise of the share of renewable energies in the final energy consumption to approximately 9.2 % (2006)⁵⁰. The target for 2020 is, however, 20% and to achieve that the EU will need to install the same capacity of renewable energy that it has done in the last decade every single year for the next 12 years. This target cannot be reached without massive advancement of the technological development of the most promising energy technologies. There are considerable differences between different energy technologies and also between countries. The wind sector enjoys for example growth rates of 25% per year while the solar photovoltaic's sector has had growth rates of 40% per year in the last years.

The renewable sector faces considerable challenges in the implementation of the RES regulatory framework in the Member States. Nevertheless, the regulation is important as it creates framework conditions for an energy market where renewable energies will play a significant role in the energy mix. Europe also lacks cost effective technological solutions to reach the 2020 climate and energy targets which represents a major challenge for an economically sustainable policy. The acceleration of development, demonstration and commercialisation of strategic energy technologies (especially renewable energies) will thus require significantly higher investment along with a greatly enhanced degree of coordination of different public instruments.

The lead market ability of RES technologies is a prerequisite for turning an ambitious RES policy into leadership potential for European industry. This prerequisite is fulfilled in particular for knowledge- intensive goods. In general the technological intensity of renewable

⁴⁹ *The impact of renewable energy policy on economic growth and employment in the European Union*, Employ-RES research project conducted on behalf of European Commission DG Energy and Transport, 2009

⁵⁰ EUROSTAT, June 2008

technologies can be judged as being above average or equal to those made by competitors. Three other important characteristics are high innovation dynamics, high potential learning effects as well as cost effectiveness.

State of play

Market

Electricity from renewable energy had reached a share of 15.7% in 2006⁵¹. The proposed target of 21% by 2010 cannot, however, be reached without a significant effort. MS cover a wide span of performance. Technologically, the greatest advancement has been in the use of biomass and wind technologies. The wind sector represents 4% of the electricity produced and growth has been driven by Germany, Spain and Denmark and recently Poland. Finland, Sweden and Germany are, however, the major contributors for biomass share with Poland and Hungary also achieving strong growth rates.

Transport

Bio-fuels used in road transport were 2.6% in 2007 and is expected to reach 4.2% share by 2010 which is mostly in line with set targets. Electricity is used very little in road transport. Usually this is classified as electricity from renewable energies.

Heating and Cooling

This is a sector that before the adoption of the RES Directive was not covered by European legislation. This sector is responsible for approximately 50% of all energy consumption and 60% of renewable energy consumption. The heating and cooling sector is dominated by the use of biomass but it also includes solar thermal and geothermal energy.

Development of technologies

As a result of the implementation of the SET Plan, a Steering Group and 6 European Industrial Initiatives have been set up. These groups consist of representatives from relevant contact groups for policy innovation involving Member States and the industry. The Steering Group and the European Industrial Initiatives also function as contact groups for the LMI on RES. The Steering Group which consists of MS representatives ensures the overall coordination and conceives joint actions taking into account national specificities and priorities for development of innovative technologies and their penetration into the market. European Industrial Initiatives, while focused on research and demonstration actions, identify needed measures such as development of standards and educational programmes.

⁵¹ The Renewable Energy Progress Report, COM (2009) 192

The roadmap presented in the LMI Communication (Annex 1), outlined 18 actions and activities in the renewable energy lead market for the period 2008-2011. The actions are mainly driven by the policy objectives and the RES regulatory framework as well as implementation tools on the technology side rather than by complementary innovation measures. The following sections provide an overview of the progress which has been made until now.

Actions 1, 2, 3 & 5 : Adoption and implementation of the RES Directive

The RES Directive and the binding targets agreed by the Member States represent one of the strongest signals the EU has sent in terms of a regulatory framework from which a particular sector can benefit and which is aimed at driving developments within the sector. The RES Directive was adopted by the Council on 6 April 2009.

The agreed text contains the following main elements⁵²:

- Binding targets for the share of renewable energy in energy consumption in each Member State in 2020 are established; 20% share of EU consumption in that year compared to 8.5% in 2005.
- An "indicative trajectory" is laid down for progress including a 10% target for renewable energy in transport
- Accounting rules are laid down for counting renewable electricity in transport towards the 10% renewable target in the transport sector
- Member States must produce renewable energy action plans in 2010
- A system of "cooperation and flexibility mechanisms" is established, allowing one Member State to "statistically transfer" to another Member State credits for renewable energy consumed on its territory. The cooperation and flexibility mechanisms will allow Member States with higher GDP, higher targets and lower potential to buy credits from those with lower GDP, lower targets and higher potential.
- Rules are set for the import of renewable electricity from third countries. They require physical trade. EEA countries can join the system of cooperation and flexibility mechanisms (providing they adopt targets of comparable ambition).
- Member States must introduce defined improvements to the administrative procedures with which renewable energy producers must comply.
- Member States must increase the use of renewable energy in the construction, ensuring that new and refurbished public buildings fulfil "an exemplary role".
- Grid access - reinforced in relation to infrastructure development and priority/guaranteed access.
- Member States and the Commission must each report biannually on progress made. The Member State report covers the general implementation of the Directive.

⁵² Note: the numbering of Articles will change in the final version.

- The Commission must report in 2010 on ways to improve the financing of renewable energy and the coordination of projects that involve several Member States.

The RES Directive is a major political and regulatory framework which was triggered by a political decision. While not being driven by LMI, the potential impact of the LMI is substantial as it gives a very important signal to RES industries to invest in technology development to maintain competitiveness or get worldwide leadership.

A template for National Renewable Energy Action Plan has also been developed and MS have already a RES binding target. The adoption of this template by the Commission by 30 June 2009 is required by the Directive and MS will have to comply with this template and submit their national action plans by 30 June 2010. National Action Plans can be of relevance for monitoring the progress of LMI on RES implementation.

Environmental sustainable criteria

Further to what is already foreseen in the RES Directive regarding sustainability criteria for bio fuels, fully described also in Action 12 sustainability criteria will be considered on biomass. A Communication is foreseen before the end of 2009.

Guidelines for authorization procedures

Intelligent Energy Europe promotes the reduction of administrative barriers which is the main programme for this action.

The adoption of Action Points 1, 2, 3 and 5 followed the schedule set out in the roadmap for the renewable energy lead market.

Actions 4, 6, 7: Remove planning and certification barriers to the uptake of renewable energy, incorporate renewable energy in building codes

These actions are covered by the Renewable Energy Directive, COM (2009) 30 which was adopted in 2009. These actions are also related to the Intelligent Energy Programme. For Actions 4 and 7, the adoption was with the RES Directive. For Action 6, which refers to the integration of renewable energy in buildings, a common call is envisaged to be set up within the lead market on sustainable construction. This cross-sectoral approach might create a wider application perspective for the LMI of RES and could speed up actual implementation of new technologies in the market.

Action 8: Implementation of Strategic Energy Technology (SET Plan)

The implementation of the SET Plan acts from the supply-side perspective by focusing on efforts related to the development of low carbon technologies, including RES. Implementation of the SET Plan is according to schedule and FP7 calls are currently being created that correlate with the priorities set by the plan. SET was released in November 2007 with the intent to change "bottom-up" ideas-driven R&D funding to a more guided strategic approach.

The plan aims to accelerate the availability of sustainable energy technologies in the market while ensuring a leading position for the European industry and making the most use of its research resources. It brings together the public sector (EU and MS), research and the European industry. The Commission acts as a facilitator.

Update on the progress achieved:

- Steering Group – ensures close coordination with member states and their national programmes. Meets 2-3 times a year. Progress has been also made in establishing an information system which supports the decisions of the Steering Group. A web portal was launched in the first half of 2009
- European Industrial Initiatives (EII): Six EII for wind, solar, bio-energy, carbon capture and storage, electricity grids and sustainable nuclear fission are planned. The initiatives are currently being defined by the industry and should result in the integration of the efforts of the public (both EU and Member States), industry and researchers. They are targeted to achieving concrete results in a specified time-scale. Progress is made at a different pace in the 6 sectors depending on the organisation, the structure and the degree of ambition and commitment of the industries. The first 2 EII are expected to be set up in 2009 and at the beginning of 2010, probably on wind and solar.
- European Energy Research Alliance which operates through a shift in the working approach; from cooperation on projects towards pooling together the resources through jointly implementing pan-European programmes. First programmes will be initiated before the end of 2009.

As mentioned previously the Steering Group and the European Industrial Initiatives represent the contact groups for the LMI RES. Hence it can be said that the LMI can benefit from access to these key stakeholders for a transparent and constructive dialogue to further ensure a successful implementation of the RES Directive, the uptake of new innovative products and services, and continued technological developments of renewable energy technologies.

Action 9 A: Establish a network between public authorities in charge of procuring

The implementation of this action was included in the LMI Call for Proposals for the establishment of Public Procurement Networks which was launched in November 2008 and closed in February 2009. No proposals were submitted in this area, which may indicate a lack of awareness of public procurers in this area of the Lead Market Initiative.

For any new call particular efforts are needed to raise awareness with local, regional and national public authorities in renewable energy. Progress on public procurement for renewable energies will be indirectly facilitated through the RES Directive.

Action 10: Begin the process of adopting minimum energy performance standards

A study on the energy efficiency of Solid Fuel Small Combustion Installations has been launched. The study will be published before the end of 2009 and provide input to a proposal for minimal energy efficiency requirements in 2010. The progress of the study can be followed through a dedicated website: <http://www.ecosolidfuel.org/>. The study follows the original timeline and is an important input into raising awareness among lead buyers and the industry on energy efficiency requirements.

Action 11: Ensure appropriate measuring methods through CEN/CENELEC

There is need to intensify efforts on international cooperation.

Under the LMI, further consideration should be given to development of standards for different components in the wind and solar sectors. Thus, it is proposed to focus more attention on this action during the second part of the LMI.

Action 12: Development of a bio fuel sustainability regime in the new renewable energy legislative framework.

The RES Directive specifies a sustainability criteria for bio fuels. They must be fulfilled in order for bio fuels to count towards the targets or receive public support. The criteria includes among others:

- A minimum greenhouse gas savings of 35%, rising to 50% in 2017 (60% for new installations); the increase is subject to review in 2014.
- A ban for biodiversity reasons on using biomass from primary forest, nature protection areas or highly bio diverse grassland.
- A ban on carbon stock reasons on using biomass from land that was previously wetland, forest or undrained peat.
- A requirement for companies to report on a wider range of environmental and social impacts.

Member States may not lay down sustainability requirements that go further but are responsible for enforcing the sustainability criteria. The Commission can accredit international agreements and voluntary schemes that provide reliable evidence that the criteria have been fulfilled. This will be done through the comitology procedure. Bio fuels from waste, residues, non-food cellulosic material and ligno-cellulosic material will count double towards national renewable energy obligations and also towards national targets for the share of renewable energy in transport.

Actions 13 &14: Provide guidance on financing from funding mechanisms like the EU Structural funds, European Investment Bank ,FP7, and strengthen the coordination and bridge the gap between successful demonstration and effective market entrance

The European Commission Task Force on financing low-carbon energy produced in July 2008 a compendium of all programmes and funds existing in EU which can be used to finance Renewable Energy Sources. Moreover, a Joint Action of EIB together with the Commission has been initiated, Sustainable Energy Financing Initiatives, which focuses on RES and energy efficiency projects in municipalities. Furthermore, the Economic Recovery Plan supports offshore wind projects and will be implemented in 2009 and 2010 through a call for proposals. The revenues from 300M emissions trading allowances are earmarked for demonstration actions for CCS and "innovative renewable." These represent new funding sources in addition to the sources provided through FP7 but which might not be enough to cover the financial needs.

The Communication on financing low carbon technologies, which is foreseen late in 2009 has the following aims:

- To analyse and quantify the current investment to develop and commercialise low carbon technologies in the EU;
- To assess the investment needed in view of the new energy and policy goals, for the actions proposed in the SET-Plan;
- To propose a partnership plan on European Union level - involving industry, Member States, the financial community and the European Commission - to decrease the mismatch between current investment level and investment needed.

The market replication projects represent an instrument of The Competitiveness and Innovation Framework Programme (CIP) which can effectively contribute to the market uptake of different technologies including renewable energies. This type of instrument should be extended to other sectors like Intelligent Energy for Europe Programme .Enhancing the coordination and the continuity between EC programmes (FP 7, IEE and CIP) by ensuring the follow up of the demonstration with market replication projects from the work programming phase coupled with European Climate Change and Initiative of EIB and EC can trigger higher market deployment magnitude for RES technologies. This is very relevant for the LMI RES.

The Regions of Knowledge (Capacities programme) launched a call in September 2008 aimed to support consortia of clusters that are thematically linked to the Lead Market Initiative. Results of the call can be added in a later stage.

Action 15: Publish and disseminate a guide on how to establish collaborative working schemes in renewable energies, contractual, management and insurance rules as well as good practice for SMEs.

This action has been considered to be dropped for lack of feasibility.

Action 16: Propose background information for future qualification needs and develop best practices to facilitate the upgrading of skills and competencies in renewable energies

A study on future needs for skills within the renewable energies' sector will be launched in the second half of 2009. Some of the European Industrial Initiatives have, however, already identified their needs in terms of education and training such as solar and wind sector. Budgets related to new educational programmes have also been identified. The possibility of linking the proposed educational programmes with the European Institute of Technology as well with other EC programmes such as Lifelong Learning Programme and the Social Funds should be further considered. Depending on the outcomes of the study an outline strategy for action will be developed.

Action 17: Improve the knowledge on barriers to disseminate the RES technologies and their implementation all over the world

This aspect is addressed by the RES Directive. Bottlenecks in the supply chain of RES technologies should be checked and the information distributed. Furthermore, the large deployment of the RES, especially in the electricity sector, is highly dependent on the electricity grids.

Action 18: Increase the knowledge on effective barriers of development of a demand for renewable energy– link with status with IEE projects.

Conclusion

Out of 18 actions put forward in the renewable energy lead market only 3 have not started yet. And the task force is considering dropping 1 of these. Progress has been made in most of the actions. Significant progress is related to the adoption of the regulatory framework, the RES Directive, and the SET Plan, and the actions derived from these adoptions. Significant progress has also been made in focusing the efforts and enhancing the cooperation of the industrial and research communities to achieve concrete technological objectives as stated by the SET Plan. Member States have also been involved in the process. This is very important in terms of reaching markets and fully realising the potential of innovative products and services in the renewable energies market.

Financing of research, development, demonstration and innovation activities identified for the RES key technologies is the main challenge for the future. Here, the LMI can play a role in focusing attention and enhancing coordination between different EU programmes to take up new technologies in this market. Grid connection aspects for RES electricity is another important element. Further consideration should also be given to these aspects in the LMI RES. Standardisation of different components of RES technologies might also be of relevance for the LMI RES and it is proposed to incorporate this instrument more strongly in Action 11 during the second half of the LMI.

Progress made in horizontal/overarching activities and forecast/preview for period till 2011:

7.1.7. Public procurement:

The Lead Market Initiative's public procurement activities have focused on stimulating public procurement as a tool to increase demand for innovative goods and services by public organisations. The Innobarometer 2009 showed again that improvement can be made in public procurement methods. According to the companies interviewed on innovative aspects of public calls for tender, most such public procurement opportunities did not offer the enterprises surveyed a possibility to sell or, at least, to offer innovation.

Most of the action plans for each lead market included the establishment of networks of public procurers. These networks will bring together Europe's most advanced organisations (e.g. cities, procurement agencies, hospitals, fire brigades etc) active in purchasing innovative goods and services in lead market sectors. Networks are expected to start in September/October 2009.

These were set up in two steps: a consultation step, which was common to all lead market sectors, and an implementation step, whereby networks in a number of lead market sectors were funded.

From May to July 2008, the Commission organised a public consultation to seek views on how best to establish such networks. The responses showed wide support for the need for trans-national networks that are specialised in specific market areas and aim to foster innovation through trans-national collaboration on interactions between procurers and suppliers, on developing and coordinating procurement strategies, and on dissemination and training to raise the professionalism and knowledge of procurers. At the same time, the responses indicated that public procurers' activities relating to innovation and trans-national collaboration are very limited although there have been some initiatives at national and regional levels, and in a few cases between countries. The feedback received from this public consultation was used to prepare the scope and objectives of a call for proposals, which was published in November 2008, covering five of the lead markets.⁵³

47 organisations expressed interest and 11 proposals were submitted. Those included more than forty organisations from some twenty countries. The level of interest and response to the call demonstrates that a demand exists from public procurers to build their knowledge of innovation and collaborate across borders. The proposals included a wide variety of different approaches and types of organisation⁵⁴, including national ministries, regional and local

⁵³ See ENT/CIP/C/N03S00, eHealth was not included in this call, but in a separate CIP PSP call launched in 2009.

⁵⁴ The eligibility criteria of the call restricted participation to contracting authorities (or equivalent in non EU countries) with the exemption of project coordinators who could be not for profit organizations.

authorities, specialised public bodies (e.g. hospitals, specialist procurement and technical organisations) and associations. Sustainable construction attracted most proposals, while there was less interest in some of the lead market areas, such as recycling, which could reflect a lack of awareness of procurers in these areas about the lead market initiative.

Three proposals were retained for funding, one in the protective textile sector and two in sustainable construction, one of them with a focus on healthcare related buildings. The projects are expected to be launched in early Autumn 2009 under the Swedish presidency, with a duration of three years. During the implementation of the networks it will be important to ensure strong links with other initiatives such as those on pre-commercial public procurement and existing networks in the area of public procurement.

In May 2009, DG Information Society launched a similar call under the CIP PSP programme to network public procurers in the eHealth sector. The scope of this call is extended by also including funding for large scale pilots in eHealth⁵⁵.

It was apparent from the preceding consultation and call that in many countries there are few, if any, organisations that have knowledge about innovation in procurement markets, and that can actively engage in trans-national dialogues with suppliers and develop procurement strategies. Organisations located in the European innovation leaders' countries as identified by the European Scoreboard⁵⁶ were the best represented within the consortia. Moreover, the results from the 2009 Innobarometer survey show that 30 % of companies across Europe consider that cost is more important than innovation in winning public tenders. It will therefore be important to monitor the activities and impact of the public procurement networks that are now being established, [and this will be included in the assessment of the Lead Market Initiative foreseen for 2011].

Additionally, the Communication on Green Public Procurement (GPP) (COM 2008-400/2) can now be used to foster the development and market uptake of new products and services aiming at stimulating innovation on sustainable goods, such as bio-based products.

7.1.8. Standardisation

The timescale for standardisation is considerably longer than for the innovation process. This can hamper the introduction and diffusion of innovations. The current European and international standardisation models are challenged by changes in market cycles and use of technologies. The lessons learnt from the LMI sectors provide valuable input into policy making in this area.

⁵⁵ See ICT PSP WORK PROGRAMME 2009

⁵⁶ http://www.proinno-europe.eu/admin/uploaded_documents/European_Innovation_Scoreboard_2007.pdf

Standardisation activities have been strongly intensified in 4 out of 6 lead markets. The LMI task forces provide the basis for the standardisation work in the LMI sectors concerned. Meetings have been arranged involving relevant Standard Developing Organisations and the lead markets' task forces, to evaluate the needs of each of the lead market sector. As a result of this work, standardisation mandates were prepared in 2008 in bio-based products, and stocktaking of the sectors' standardisation activities, and gaps, is being undertaken, in particular for sustainable construction.

Notably, in bio-based products, two standardisation mandates (for bio-lubricants and for biopolymers) were given to CEN⁵⁷, and are expected to lead to workshop agreements by mid-2010 (see bio-based products section). To involve the broader standardisation stakeholders, the LMI has also been presented to standardisation groups such as the 98/34 Committee (including National Standardisation Organisations), CEN-STAR and other regular meetings with senior standardisation officials. Awareness of LMI standardisation has also been raised among relevant stakeholders. This has been done for instance at the meetings of the Technical board of CEN/CENELEC.

Evidence from the lead market sectors, and from standardisation networks in Europe INNOVA, shows that there is scope for a more intense use of interoperable standards with a strong European and global acceptance. This could reduce fragmentation and increase the competitiveness of European markets, in particular if it involves new innovative businesses and users.

To prepare the road ahead in this context, European Commission's DG Enterprise held a Europe INNOVA⁵⁸ *Standards for Innovation workshop* on 3 June 2009.

The overall aim of the workshop was to get inputs on possible actions in the field of market validation of standards, raise awareness, and discuss with Standardisation organisations the use of standards by European projects in support of standards for innovation. The workshop set the scene by providing the principles of market validation and tools helping businesses screening and selecting standards according to their degree of interoperability, compatibility and performance. The aim was to identify barriers to the setting up of tools in support of better selection of standards by innovative businesses, and to establish an action plan, which could be valuable in the LMI context.

⁵⁷ CEN is the European Standards body. It produces standards covering all aspects of life and industry. CEN's mission is to promote voluntary technical harmonization across Europe in conjunction with worldwide bodies and its partners in Europe in order to diminish trade barriers, promote safety, allow interoperability of products, systems and services, and promote technical understanding.

⁵⁸ Europe INNOVA is an initiative of Directorate General for Enterprise and is designed to identify and analyse the drivers and barriers to innovation within specific sectors through the establishment of networks for exchanging experiences, good practice and knowledge to better serve SMEs. For more information see <http://www.europe-innova.org/index.jsp>

7.1.9. CIP calls

In 2009, a new set of Europe INNOVA actions is being launched. The new actions are based on European Innovation Platforms in three high priority policy areas: transnational cluster cooperation, knowledge-intensive services and eco-innovation. The actions are oriented towards the development and testing of new innovation support services for SMEs delivered in the field by public-private partnerships made up of European professionals in innovation. The support services will be tested in view of their wider application, e.g. by the Enterprise Europe Network.

Europe INNOVA supports the Lead Market Initiative: proposals in the last call had to be in sectors of high political priority in Europe, including those of the Lead Market Initiative. The highlight in the call was notably for:

- energy-efficiency and other forms of eco-innovation in the European Innovation Platform for Clusters (Cluster-IP);
- market areas which are not yet covered by the first phase of the KIS-IP (renewable sources of energy, space applications and ICT) in the European Innovation Platform for Knowledge-Intensive Services (KIS-IP);
- bio-based products, recycling and sustainable construction in the European Innovation Platform for Eco-innovation (Eco-IP).

The call for proposals closed on 12 February (EuropeINNOVA-ENT-CIP-09-C-N01S00) and the evaluation process is planned to be finalised in June 2009.

7.1.10. FP7 calls

Several programs in the Seventh Framework Programme are bringing synergies with the Lead Market Initiative.

- 'sector-specific calls' are described as part of the action plans (notably sustainable construction, bio-based products and protective textiles).
- Regions of Knowledge programme

The Regions of Knowledge (Capacities strand in FP7) programme aims at promoting regional economic development in order to strengthen the research potential of European regions and increase their participation in the European Research Area, by supporting the cooperation, across Europe, of regional "research-driven clusters". The cooperation between clusters from at least three different countries is intended to gain a critical mass and potential for international competitiveness through excellent research at a regional level and a favourable entrepreneurial climate.

The 2009 call⁵⁹ is very supportive of the Lead Market Initiative. It aims at boosting the cooperation between clusters in the field of the management of natural resources. It includes five themes linked to the Lead Market Initiative: renewable energies (water, forest and soil management), bio-based products (water, forest and soil management), sustainable construction (forest management), protective textiles (water and waste management) and recycling (water, land and waste management). Innovative and cross-cutting approaches were encouraged. The deadline for submission of proposals to this call was set on 27 January 2009. The total indicative budget for the call was 16.15 M€

Nine proposals out of 29 proposals submitted are expected to be funded. The cooperation between research-driven clusters within the granted projects will focus on waste management, use of biomass products in forestry and biomass for bulk products and from forest. Besides a strong linkage with the Lead Market Bio-based products other projects have links with the lead markets Sustainable construction and Recycling. The Commission will catalyse links between the activities of the funded consortia and other activities of the Lead Market Initiative, in the frame in particular of the Commission initiatives in the field of clusters

The 2010 Regions of Knowledge call should be related to health including the lead market eHealth.

⁵⁹ Call identifier: REGIONS-2008-1

8. ASSESSMENT OF POLICY COORDINATION ATTAINED BETWEEN THE LMI AND OTHER EC, MS OR INDUSTRY INITIATIVES

The LMI Communication states that the mid-term progress report should describe the commitment of public and private stakeholders to the initiative. This chapter provides an overview of the lean governance structure put in place for the implementation of the LMI. It then outlines the results of surveys on the commitment and interest from Member States (questionnaire to the EPG sub-group on innovation) and Trendchart Policy brief) and business (Innobarometer survey) in demand-side innovation policy and the LMI in particular.

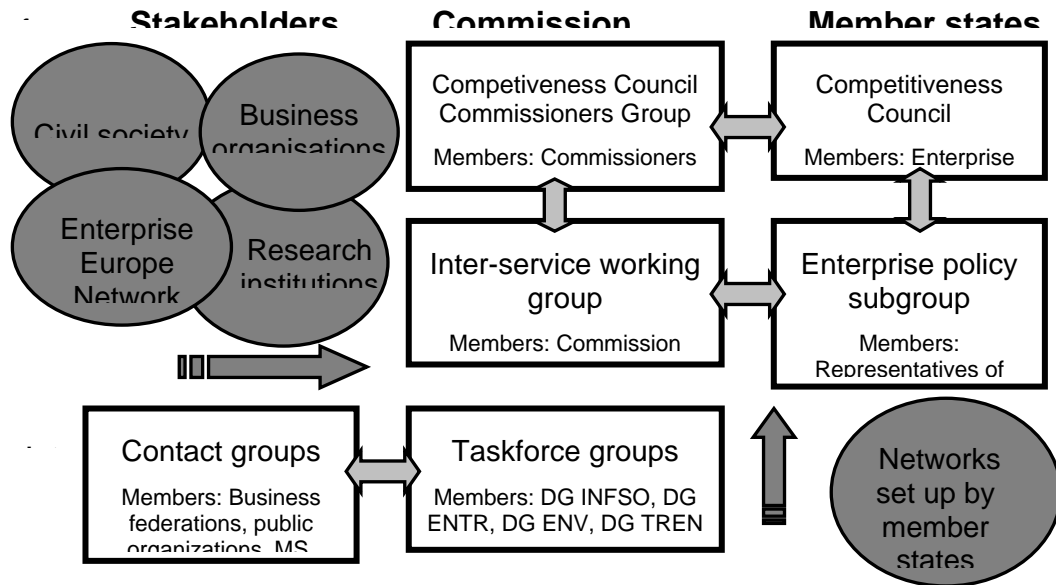
Governance structure of the Lead Market Initiative

The added value of the mix of policy measures of the LMI action plans depend greatly on policy coordination. Policy-making on demand-side instruments is generally seen as more dispersed and in need of more coordination than traditional supply-side innovation policy. Mirroring observations made by Edler⁶⁰, major challenges in coordinating demand-side innovation policy may be felt on three levels: coordination, incentives and strategic intelligence. These could all be inter-related.

Ensuring coherence and coordination of activities between policy-makers in the Member States (including procurement agencies, standardization bodies etc.), Commission services, businesses and other stakeholders, such as NGOs and consumers, is essential to the success of the LMI. This poses some challenges because strong policy coordination requires considerable human resources from the beginning, while participating policy-makers and other stakeholders many not see many immediate benefits of the actions until much later.

An overview of the LMI governance structure is provided here:

⁶⁰ Futuris input paper by J. Edler, see http://212.37.193.12/colloque_futuris_2009/ressources.htm



Attaining improved policy coherence within the Commission services

The inter-services Working Group on Lead Markets⁶¹, led by Directorate-General Enterprise and Industry, was established as a platform for coordinating the activities between Commission services. This group also ensures consistency in the implementation of activities in cross-cutting areas such as in public procurement and standardisation.

The implementation of each action plan is led by a task-force, often consisting of several Directorates General of the Commission. Each action plan has a 'lead' Directorate General of the Commission. For renewable energy, DG Energy and Transport took over the leadership from DG Enterprise and Industry in the summer of 2008.

eHealth	DG Information Society and Media
Bio-based products	DG Enterprise and Industry (Directorate F)
Sustainable construction	DG Enterprise and Industry (Directorate I)
Protective textiles	DG Enterprise and Industry (Directorate G)
Recycling	DG Environment
Renewable energy	DG Energy and Transport
Overall coordination	DG Enterprise and Industry (Directorate D)

⁶¹ The Inter-services working group is coordinated by DG ENTR (D.1) and composed of lead DGs TREN, ENV, INFSO and ENTR and other interested DGs (SG, BEPA, ECFIN, COMP, AGRI, MARKT, RTD, REGIO, TAXUD, MARE, TRADE, JLS and SANCO)

The decentralised governance structure means that the implementation of the Lead Market Initiative is a shared responsibility between Commission Services, though this has also perhaps resulted in lower-than-expected visibility for the initiative inside the organisation.

The overall progress made in Lead Market Initiative has been reported at least once per year to the Competitiveness Council Commissioners Group (CCCG).

The internal coordination was effective, though the time and effort required for this were probably underestimated in the preparation and planning phases of the LMI. Additionally, setting up and running the contact groups (particularly the newly established groups) required considerable human resources of the lead Directorate Generals.

A number of studies on demand-side innovation policy show that implementing demand-side innovation policy requires a combination of vertical innovation policy coordination (between policy designers and policy implementers) and horizontal policy coordination (e.g. public procurement, legislation)⁶².

Within the Commission, this meant that colleagues from ‘regulatory units’ were increasingly cooperating with those from sectors and those from research and innovation policy units. Cooperation, both on LMI issues and beyond, was improved particularly across sustainable construction, recycling, bio-based products and renewable energy. eHealth and protective textiles were equally involved in discussions on public procurement issues, regulation, standardisation and funding opportunities. For example, DG ENTR, DG INFSO and DG MARKT worked closely together to prepare a CIP call for networks of public procurers (see chapter 2). A number of activities of the Economic Recovery Plan are linked to the Lead Market Initiative, notably in the construction, recycling and renewable energy sectors.

Therefore, the implementation of the Lead Market Initiative created new networks and bilateral contacts across policy areas and sectors, which is one of the very encouraging signs of enhanced policy coherence.

Member State involvement in the LMI

To reap the full benefits of an initiative such as the LMI, active involvement of Member States is necessary.

⁶² Futuris input paper by J. Edler, see http://212.37.193.12/colloque_futuris_2009/ressources.htm

8.1. The involvement of policy makers from Member States has been ensured through the work of a sub-group on ‘innovation with a focus on the LMI’ of the Enterprise Policy Group (EPG)⁶³. The EPG sub-group on innovation provides a forum to discuss synergies of lead market activities with national and regional instruments and innovation policies. It meets twice a year. A dedicated password protected extranet was established to facilitate communication with sub-group members.

The mandate of this sub-group is further to ensure:

- Coordinated implementation of the LMI action plans by close cooperation with Member States (notably procurement authorities, standardisation and innovation agencies, and regional authorities), business and other stakeholders.
- Synergies of LMI activities at EU-level with national and regional instruments and innovation policies;
- To analyse and discuss specific issues in innovation policy.

The first meeting in October 2008 attracted a strong participation from Member States. A second meeting was held on 16 March 2009. At both the first and the second meeting, the Commission presented progress made in the implementation of the LMI action plans. Member State representatives also presented developments on demand-side innovation policies in their countries. A consultation of the EPG sub-group on topics for the European Innovation Plan may be envisaged.

Ensuring policy coordination, transparency and visibility of LMI activities was noted in the EPG sub-group as key priorities throughout the implementation phase.

The challenges seem to be two-fold:

- Firstly, most EPG sub-group participants are principally working on horizontal innovation supply-side policy development and implementation, while the LMI implementation concerns demand-side innovation policy with a strong sectoral focus. This reflects the difficulty of innovation policy-makers at all levels (Community, national, regional or local) to mainstream innovation policy in other policies, be it sectoral or public procurement or standardisation activities. It is envisaged that some representatives from the contact groups will be invited to a future EPG sub-group meeting (probably in autumn 2009) to discuss their activities.
- Secondly, data protection regulations⁶⁴ prevent the Commission services from broadly publicising the names and organisations of experts based in Member States that take part in the lead market-specific contact groups. In Sustainable Construction and in Protective Textiles Contract groups, Member States are also included in the Contact groups.

Therefore, forging links between the innovation policy domains and sectoral activities of the 6 lead market action plans, both at EU level and at MS level, is still an outstanding issue. The work of the EPG sub-group on innovation as a forum for feedback from Member States continues to be important in the second phase of the LMI implementation.

⁶³ Commission Decision C(2006)5188.

⁶⁴ See the website of the Register of Expert Groups at <http://ec.europa.eu/transparency/regexpert/index.cfm> The register of expert groups was set up by the European Commission with the aim to give a transparent overview of the advisory bodies that assist it and its services in preparing legislative proposals and policy initiatives

Assessment of Member State interest/ commitment – an analysis of Member State questionnaires:

The members of the EPG sub-group on innovation were **sent a short questionnaire** in March 2009 (also discussed at the second EPG sub-group meeting) to provide input on a number of issues related to the implementation, governance and involvement of Member State organisations in the Lead Market Initiative. These EPG sub-group members are mostly based at national governments working on innovation policy formulation (not sector-specific) within departments working on enterprises, industry and innovation. Some EPG subgroup's organisations also managed innovation policy (funding programs) and/or are involved in innovation policy analysis and evaluation and/or provided services to enterprises. In other Member States, these core tasks were carried out by different Ministries, Agencies and Departments that closely cooperated.

Main conclusions from the information provided in the questionnaires of the Member State EPG sub-group members:

(1) In more than half of the Member States that responded, there was some evidence of new innovation policy developments or changes in policy directions, partly as a result the launch of the LMI in December 2007 and partly timely coinciding with the LMI's launch.

(2) Policy coordination and information between all actors involved in the LMI implementation still requires more work.

(3) Focus of the LMI at this point of time should be clearly on demand-side innovation policy measures. The link to supply-side side measures would become more opportune at a later stage.

(4) There is interest from some Member States to stronger link the LMI with activities to cluster policies, standardisation and public procurement (including green public procurement).

In more detail:

(1) Assessment of the influence of the LMI on national policies:

The interest in becoming involved in the Lead Market Initiative varied among the different Member States. In 16 answers for the MS questionnaire, 12 mentioned evidence of new policy developments or changes in policy directions has taken place following the launch of the LMI in December 2007. These initiatives include: giving more attention to demand-side policy measures across all sectors, measures that apply to some lead market sectors (particularly in the sustainable construction and renewable energies sectors), and studies into the development of new strategies for innovation policy.

For a large group of Member States it is still too early to see direct effects of the LMI on their supply- or demand- side policies within their national innovation policy.

(2) Assessment of coordination mechanisms across the LMI market sectors in Member States:

Since the start of the LMI, efforts have been made by the Commission Services and Member States to include as many stakeholders in the development and implementation of the initiative as possible. Some countries in this regard have set up national contacts group or networks supplementing the EPG sub-group on innovation, thus integrating different stakeholders at national level.

Coordination mechanisms to support the LMI are still preliminary in most Member States. Most Member State respondents feel that the Commission should put more efforts on the coordination aspect of the initiative. Due to the complexity of the approach, the various measures and the different stakeholders involved, the information flow is a challenging task.

Within the European Commission, different DGs are involved and at Member State level national government and agencies are working on the lead market sectors. Many Member States commented that contacts between the members of the EPG-subgroup and the lead market-specific contact groups started to develop only recently. Most, however, show interest in increasing the effort of building networks together with the experts in the contact groups. Member States also repeatedly mentioned the importance of enhancing coordination and communication efforts to make the lead markets a success.

(3) Focus of the LMI should be on demand-side innovation policy measures:

Some respondents are concerned about diffusing the LMI's policy approach too widely, making the governance of implementation too complex. Although connecting demand-side innovation policy with supply-side policies makes sense, this should not distract too much from driving the implementation of the ambitious action plans.

(4) Best practices in demand-side innovation policy:

The European Commission is interested in learning from LMI-related activities in Member States that can be used at a European level or within other Member States. This sharing of best practices (evidence based policy making) is highly regarded by the Member States and can be an effective way forward for the LMI. Most Member States found it too early to respond to the question on sharing best practices at an EU-level or with other Member States.

As already noted in section 2.1.7 on the Commission's call for networks in public procurement, the answers indicate that Member States are increasingly aware of the effects an improvement in methods used for public procurement (including green public procurement) can have on innovation. A number of respondents pointed out that they envisage a link between cluster policies and the LMI, particularly in relevant sector-specific clusters for the 6 market areas. Cluster policies can be seen as systemic demand-side innovation policies which

provide a location that augments other innovation policy measures by optimising relationships between actors⁶⁵.

Assessment of use of demand-side innovation policy, including the LMI approach in Member States - results from a Trendchart survey:

Over the period December-March 2009, the Commission asked the Trendchart consortium to collect information from the network of INNO-Policy TrendChart correspondents on demand-side innovation policies in the EU27 and a number of other countries to feed into the policy-making process of the European Commission and to be disseminated through the TrendChart website. The Trendchart consortium contacted its correspondents' network in the period December 2008 - February 2009 and prepared a draft 'Policy Brief on demand-side innovation policies' in March 2009. Preliminary results were presented at the March meeting of the EPG sub-group, where Member States were invited to comment.

The report is available on the internet, under TrendChart Thematic Briefings: www.proinno-europe.eu/index.cfm?fuseaction=page.display&topicID=265&parentID=52)

Key messages from the Trendchart Policy Brief on demand-side innovation policy are:

- The degree of debate on demand-side innovation policies in Member States varies greatly, with some Member States spearheading this emerging area, such as Finland, the UK, the Netherlands and Sweden.
- Sectoral focus in demand-side innovation policy is important in many Member States, particularly in environmental technologies, ICT, health, transport and construction.
- Looking at demand-side innovation policy instruments, public procurement is increasingly used and recognised as a tool by Member States and regions.
- Regarding governance, most demand-side measures in Member States are implemented by innovation-related organisations (e.g. innovation agencies, public procurement agencies), rather than sectoral ministries or other public organisations.
- Also reflected in the outcome of the Member State questionnaire, few countries have already commenced with activities directly catalysed by the launch of the LMI. This was to be expected as the LMI's implementation only commenced early 2008.

Involvement of industry and other stakeholders in the LMI

The importance of the demand-side measures to industry is further stressed in the Innobarometer. One of the orientations of the **2009 Innobarometer**, to which more than 5000 companies across Europe respond and give views on innovation in Europe, was on demand-

⁶⁵ Georghiou, Luke, Input paper on the project Globalisation Challenges for Europe and Finland, presented at a meeting organised by the Secretariat of the Economic Council from September 2006

and supply-side measures. The companies interviewed are active in specific innovation-intensive industry sectors. **Almost half of the interviewed companies reported a positive effect on their innovation activities from at least one demand-side policy related change.** Supply-side policies were also less likely felt to have positively affected companies' innovation activities since 2006: just a third of all surveyed companies confirmed that newly introduced public policies in the field of taxation or direct subsidies for innovation provided them with increased opportunity to innovate⁶⁶.

Assessment of the involvement of industry and other stakeholders in the 'contact groups':

The LMI implies a "close to the market approach". For this reason, effective governance is conducted at the individual lead market level. To ensure cooperation and coordination with Member State policy makers, industry and other stakeholders (for example: standardisation agencies, professional bodies, representatives from European Technology Platforms and NGOs), '**Contact Groups**' were established or identified for each lead market. To speed up the process and to avoid duplication with activities of existing expert groups, as much as possible existing expert groups were used.

These contact groups are involved in the implementation of LMI activities and in the coordination of LMI activities with national, regional and stakeholders' activities (including industry) in their respective lead market area. The composition and the activities of each of the contact groups are described in the overview of each lead market actions in Chapter 2 and in the box below.

1. Contact groups where EC and national policy makers, industry, and other stakeholders are involved:

In the lead market sustainable construction, a joint steering group (i.e. the contact group) has been set up where the Commission works together with Member States and industry to make the LMI a success. Within the lead market of bio-based products the contact group's role is to advice on how policies and legislation affect the bio-based sector. The group intends to develop conclusions on the future priorities of the market.

Later in 2009, in renewable energy, six separate European Industrial Initiatives (EII) are planned. These groups integrate different stakeholders in public bodies, industry and research. All the contact groups contributed significantly to the implementation of the action plans in each of the lead markets.

2. Contact groups led by industry, involvement from EC and national policy makers:

Within protective textiles, the aim was to involve the LMI Member State authorities already active in the Political Mirror Group of the European technology platform for textiles and

⁶⁶ Innobarometer (February 2009), http://www.proinno-europe.eu/admin/uploaded_documents/Innobarometer_2009.pdf

clothing, whose secretariat is with EURATEX. The group currently exist of representatives of 15 Member States. Improvements within the development of this group are expected this year when the forum on standardisation in PPE will continue.

3. Contact group led by the EC with participation from industry stakeholders:

In eHealth, the contact group, which consists of industry stakeholders and users was frequently updated on progress made in the eHealth action plan, but it took some time to generate interest from its members.

4. Contact group led by the EC with participation of mainly Member State policy makers:

The contact groups (both existing groups that were assigned the LMI portfolio) for recycling and renewable energy were mainly focused on regulatory and funding issues, so it took some time to engage their members in LMI activities.

Due to the widely diverging characteristics of the contact groups, their contribution to the implementation of the action plans varied considerably. The contact groups of sustainable construction and bio-based products were most active and were co-owners in a number of distinct actions in the action plans. Some contact groups are already active, but their composition is not finalised yet, as it took longer to identify the most appropriate target participants (notably in protective textiles) or because their establishment was linked to other initiatives (e.g. in renewable energy).

As mentioned in the section on Member State involvement above, the greatest challenge was to link the Member State representatives in the EPG sub-group with relevant experts in the lead market-specific contact groups. There were some constraints to widely disseminate the work of some of the Contact Groups as a result of data protection rules and confidentiality issues.

Role of the Enterprise Europe Network:

Another way of reaching out to companies is through the Enterprise Europe Network (EEN)⁶⁷. The Commission has since the launch of the LMI cooperated with the EEN members (in particular the EEN Sector Groups) to develop a range of training and dissemination activities to increase the visibility of the LMI's activities with EEN members and their clients. Over 2009-2011, a range of activities will be jointly organised by the Commission and the EEN Sector Groups.

Strengthening links to other initiatives:

⁶⁷ The Enterprise Europe Network (EEN) offers support and advice to businesses (specifically SMEs) across Europe and helps them make the most of the opportunities in the EU. The network is made up of close to 600 partner organisations in more than 40 countries, promoting competitiveness and innovation at the local level in Europe and beyond. See more at http://www.enterprise-europe-network.ec.europa.eu/index_en.htm

Depending on the outcome of evaluations, the Commission will establish links between funded consortia from CIP (for example professional public procurement organisations in CIP-funded the public procurement networks) and FP7 calls to relevant contact groups.

9. METHODOLOGICAL APPROACH FOR ASSESSING THE LEAD MARKETS, IN PREPARATION OF THE FINAL REPORT

How can the Lead Market Initiative be evaluated?

The Communication on the Lead Market Initiative states that “a final report, drafted by independent experts on the first round of the LMI will be presented in 2011, comprising an ex-post evaluation, assessing the impact of policy actions and – to the extent possible – the actual impact on the market segments.

Given the complexity of the LMI it is necessary to evaluate the initiative firstly in *summative terms*, meaning its *progress of implementing* the defined actions for each of the 6 lead markets and in reducing identified obstacles in the market, *effectiveness* in terms of commitment of the public (notably the member states) and private stakeholders, and finally the *impact* in terms of market growth, employment rate, turnover, number of patents/trademarks etc. Secondly, it is important that any evaluation concept also takes into account *formative terms*, that are how the initiative has supported learning, change of culture and adaptation by the public, as well as activated domestic capacity for policy-making, and encompassed institutional, economic and informational framework conditions as well as the strength of NGOs. In this respect it could be particularly relevant to extract examples of good practice from the work carried out in specific policy areas (such as for example in public procurement and legislation) and assess how these could possibly be adapted and transferred to other demand-side policies.

Lessons learned from the LMI evaluation should be disseminated widely and be well embedded in the policy-making cycle in order to ensure that any new initiatives in the same area will fully benefit from this exercise.

In order to develop a methodology and identify relevant indicators for evaluating and monitoring the initiative, the Commission asked innovation experts to do a concept development study at the end of 2008⁶⁸. Feedback and input from stakeholders was received at a workshop with about 30 experts held on 8 December 2008. The accompanying study, which was completed in early March 2009⁶⁹, was discussed in the second EPG sub-group on innovation/LMI meeting on 16 March 2009. This chapter is based on the ideas for evaluating the initiative put forward in this study

This section presents an overview of how the LMI’s features could affect the tasks listed above and an outline of the next steps in the preparation of an ex-post evaluation report.

⁶⁸ Edler, Georghiou, Uyarra, Cox, Rigby and Nugroho, *Monitoring and Evaluation Methodology for the EU Lead Market Initiative – A Concept Development*, INNO-Grips Study (March 2009). See the full report at http://grips.proinnoeurope.eu/knowledge_base/view/765/monitoring-and-evaluation-methodology-for-the-eu-lead-market-initiative/.

⁶⁹ Jakob Edler et. Al (March 2009)

How do the features of the Lead Market Initiative affect its evaluation methodology?

a. The LMI deals with emerging markets, both geographically and in relations to specific sectors

As noted in Chapter 2.3 the concept of lead markets is based on the assumption that companies have in some ways failed to bring innovative goods and services to the market. This failure can, however, be rectified by public intervention to facilitate demand which will then spill over to global markets and to spur international demand favoring domestic producers.

The Commission's definition of lead markets is the market "where an innovation is firstly widely used that later becomes successful internationally regardless of where that innovation was invented."⁷⁰ In this way, an adoption of a particular innovation is not explained by a technical merit alone but also the ability of countries to foster an environment that is conducive for the uptake of new innovations, thus the demand side. Similarly, a lead market is often not the country where the innovation was invented or where the technology used for it was mainly developed.

Lead markets are thus emerging markets. This said, new products or product innovation substitute products already in the market, or are new entrants in the market. In this way new product markets and old product markets coexist but the gap between the two is sufficient from a demand side point of view, addressing new demand segments or new customer needs.

A third feature of lead markets is that the market itself exhibits features of an emerging market where there is relative stability. In the long run, the existing products are completely substituted by the new ones and the existing market used as a reference. New markets can be characterized by using analogies to the existing market, decreasing degree of substitutability related to existing markets and increasing degree of "emergence" lead markets. However, the current classification of industries, like NACE codes, or products like PRODCOM or the Harmonized System may not be able to capture trends in emerging markets. Instead, new approaches to defining indicators and measuring success of the lead market initiative may be needed.

b. Interrelations with developments on the supply-side

The development of lead markets depends on the optimal combination of supply and demand factors. On the **supply side** innovative technologies, which can be identified for example by referring to the International Patent Classification, are necessary. So is the emergence of new companies (foundation statistics; patent applications) of start-up companies (registration of trademarks) and new products and services (registration of trademarks). On the **demand side** there is a private lead user who can be difficult to identify in public statistics. Public lead user can, however, in some instances be identified by the public procurement database TED. However, TED is based on the common procurement vocabulary following NACE and PRODCOM which, as noted before, only partly comprise the scope of the 6 lead markets.

c. Placing LMI in the existing (and changing) economic and innovation landscapes

⁷⁰ COM(2006)502 "A broad-based innovation strategy for Europe: Putting knowledge into practice"

Many economic and policy factors contribute to the emergence of lead markets. Series of country-specific conditions that increase the chances of a country becoming a lead market have also been suggested such as price advantage, demand advantage, transfer advantage, export advantage, regulation advantage and market structure advantage⁷¹. Policy diffusion and regulatory frameworks also matter. Some technical innovations are stimulated by promotional measures or political intervention in the market. Some would even say that such measures are indispensable to stimulate certain innovations and to support their diffusion. This is particularly true for environmental innovations. This goes to say that when more countries are able to set the trend for international regulations through their own regulations at home, the more likely innovations developed to meet those regulations at home are demanded abroad. The same applies for policies and diffusion patterns. The Nordic countries have proven to be pioneers or trend-setters in environmental policies and their solutions systematically adopted by other countries.⁷²

d. Few other examples of demand-side innovation policy exist

The LMI is the first attempt by the EU to create lead markets and apply a complex mix of public instruments. There are only a few empirical examples of deliberate creations of lead markets in their literal sense. There are, however, a set of examples for **market transformation**, but those were not designed as lead markets that should spill over to global markets and spur international demand favoring domestic producers, but were instead driven by domestic economic and societal goals (mainly eco-efficiency). Examples of market transformation actions, such as the Swedish Market Transformation Programmes, concentrated on the diffusion of a limited number of visibly specified innovative products. As a result, transferability and impact could easily be traced on the basis of established trade and marketing statistics. As LMI concept on the other hand targets "broad market segments" where technologies or products are not specified, the impact and the direction of the impact in terms of technologies are much less clearly defined and thus more difficult to trace. The challenges for the LMI are twofold; firstly, to monitor technologies that serve the same or improved functions within the lead markets, but may be radical innovations or come from other economic areas, and secondly is to find indicators that can cover new actors, new technologies, and new products in the markets.⁷³

Keeping the conceptual framework put forward by Edler et al in mind it is suggested that as a starting point the ex-post analysis of the LMI should take the following into account:

1. The 6 lead markets are very heterogeneous so any analysis needs to capture this *heterogeneity* in order to allow comparative analysis of the markets.
2. The *baseline condition* in each selected market needs to be clear in order to assess the impact the LMI has had. During the identification process the market situation for each lead market was reviewed (patent applications, trademark registrations, foundation of companies and public procurements). So were the technological trajectories and diffusion patterns, as well as the incentive structures of key actor groups involved at the beginning of the initiative.

⁷¹ Beise (2004) and Porter (1990) have both suggested these country-specific conditions

⁷² Edler et. Al *Monitoring and Evaluation Methodology for the EU Lead Market Initiative*, (pages 5-8)

⁷³ More detailed information on the difference between market transformation initiatives and the lead market concept can be found in Edler's report, pages 11-13

3. The evaluation approach also has to *assess the interplay of the selected instruments* (public procurement, regulation, standardization and complementary support actions) within the selected market segments, as well as *each of the individual instruments*.
4. The *coordination* between the EU level and the national level and within these levels, both for the concept design and for its implementation, also needs to be evaluated.

Possible scope for the final ex-post evaluation report

As noted, the final ex-post evaluation needs to identify and measure output and actual performance, rather than simply measuring inputs. Particular focus should be placed, wherever possible, on measuring impacts.

Focusing on impact rather than the appropriateness of the measures, relevance and implementation of the initiative, presents, however, several problems.

Firstly, as will be explained below, it is a challenge to define the most appropriate **quantitative and qualitative indicators** that could act as substitutes of the lead market components and for which data is available or can be made available. It can also prove difficult to weigh each lead market factor in the total lead market potential index as it would require collecting a sufficient number of ex-post lead market cases.

The second challenge relates to the fact that the **LMI is limited in time, being a 3-year initiative**. This means that it is highly unlikely that intermediate effects in the long term and ultimate effects can be adequately measured. This said, the analysis should be able to measure *immediate effects* which could include number of networks of public procurers across Europe in place, interaction of procurers in same areas, regulatory discourse and coordination across different policy areas, standardization activities in the relevant areas started, coordination and interaction within and between demand and supply policies established, as well as established vertical coordination at EU-MS level. It should also measure *intermediate effects mid term*, such as increased public demand for innovation, removal of barriers and tying together of demand across Europe, enabling and pioneering legislation, new standards, and measures in place to provide sufficient resources and skills in related areas and demand side. *Intermediate effects long term*, such as increase in innovation input and output of companies or implementation of leading edge regulation implemented in Europe and spreading globally, triggering of private demand for innovation, and use and diffuse of new standards, as well as *ultimate effects*, such as growth in the selected lead markets (employment, added value, new companies), increased global market share of European actors, sustainable progress in tackling social challenges and more efficient and effective public service, are however not likely to be measurable within such a short timeframe⁷⁴. Thus, when it comes to the actual effects of the LMI, the final evaluation will mostly have to rely on a qualitative assessment.

The following table provides an overview of common indicators necessary to delineate the six lead markets (stars indicate the level of effort needed to get the corresponding data). These can be specified in more detail nearer to time:

⁷⁴ Edler et al laid out a Logic Chart for the LMI where qualitative and quantitative indicators of impact at different stages during the lifecycle of the initiative. *See more in Figure 3.*

Market	Common Indicators for all markets (dimensions; sources, effort: * low; ** medium; *** high)
eHealth	<i>Patent applications</i> (volumes/companies) (EPA, European Patent Office; **)
Sustainable construction	<i>Trademark registration</i> (volumes/companies) (OHIM, Office of Harmonization for the Internal Market; **)
Protective textiles	<i>Foundation of companies</i> (volumes/companies) (Statistical offices of Member States; **)
Bio-based products	<i>Public procurement</i> (volumes/ winning companies) (TED; **) <i>Survey among identified companies</i> (free to choose) (own survey***)
Recycling	
Renewable energy	

For two of the six markets it would be possible to use the following additional indicators:

Market	Common Indicators for all markets (dimensions; sources, effort: * low; ** medium; *** high)
Bio-based products	<i>NACE codes</i> of the identified segments (volumes of turnover, export, employment) (Eurostat; *) <i>Survey identified companies</i> (also to identify the turnover shares of bio-based products, which allows a rough estimation of total volumes in connection with NACE-based statistics (free to choose) (own survey; ***)
Recycling	<i>NACE code 37</i> for turnover, export, employment (Eurostat; *) <i>Environmental protection expenditure</i> (Eurostat; *)

Possible common indicators to trace market impact for the six markets are identified in the following tables which include both input and output indicators:

Market	Impact Dimension	Indicators (Sources, effort: * low; ** medium; *** high))
eHealth	Economic growth	<i>Change in value added and turnover</i> (Own survey; ***)
Sustainable construction	Employment	<i>Change in employment</i> (Own survey; ***)
Protective Textiles	International competitiveness	<i>Foundations of new companies</i> (Statistical offices of Member States; ***)
Bio-based products	Innovation	<i>Exports and imports</i> (Own survey, ***)
Recycling	Diffusion	<i>Research and development</i> (Own survey, FPs, ***)
Renewable energy		<i>Patent applications</i> (EPO, **)
		<i>Trademark registrations</i> (OHIM, **)

The following indicators to trace market impact are homogenous to each lead market:

Market	Impact Dimension	Indicators (Sources, effort: * low; ** medium; *** high)
eHealth	Health of population Productivity in the health sector	Use of ICT in health (http://www.ehealth-indicators.eu) Expenditure for health (Eurostat, *) Life expectancy (Eurostat, *) Standardised death rates (Eurostat, *)
Sustainable construction	Savings in construction materials Energy savings	Electricity consumption by households (Eurostat; **) Final energy consumption by households (Eurostat, *) Other sustainability indicators (Own survey, ***)
Protective Textiles	Health of population, especially labour force	Injuries: workplace (Eurostat, *)
Bio-based products	Savings of non-renewable or natural resources	Share of bio-based resources in the different sectors (Own survey, ***)
Recycling	Savings of non-renewable or natural resources	Municipal waste generated (Eurostat, *)
Renewable energy	Savings of non-renewable or natural energy resources	Effects of innovation on material and energy efficiency (Eurostat, *) Final energy consumption by sector: These data should come from DG TREN or EUROSTAT Primary energy consumption by fuel: These data should come from DG TREN or EUROSTAT Renewable electricity: These data should come from DG TREN or EUROSTAT Renewable primary energy consumption: These data should come from DG TREN or EUROSTAT Total energy intensity: These data should come from DG TREN or EUROSTAT

Next steps

The main focus of the final ex-post evaluation should be put on measuring market developments and impacts using indicators that are common for all the 6 lead markets, such as number of new patents and/or trademarks. The final evaluation should also focus on the definition of markets through a review of the 4 evaluation dimensions listed above; the *rationale* behind the initiative, the *appropriateness* of the methods and criteria used to identify lead markets, progress made during the period of *implementation*, and *impact*. Here attention can be put on measuring the use and benefits of each of the different policy instruments (procurement, regulation, standards and complementary actions) as well as on how the instruments have interacted with each other.

Monitoring of progress is partly done through this mid-term review and periodical updates on the status of the implementations of the defined actions for each lead markets have been done by the Commission in cooperation with the sector-specific taskforces, contact groups, Member States and other stakeholders involved. This monitoring of actions gives only limited view of the qualitative and quantitative outputs of the actions and their impact on the determined target groups but provide important indicators for progress of implementation of individual actions and their appropriateness for reaching the set goals.

Qualitative data has also been periodically collected from key actors, from experts through the Inno-Policy Trendchart initiative (namely the network of the Trendchart National Correspondents), and company representatives through the INNOBarometer. Representatives of Member States in the EPG sub-group have also answered a questionnaire on the initiative. Opinions of consumers are, however, missing.

Setting up a monitoring system, even to go a long time beyond 2011 (where impact could be assessed more precisely) to regularly measure impact is a very complex task and may not be within the budgetary limits of the LMI assessment exercise. If there will be a continuation of the initiative it is, however, recommended that such a monitoring system be set up at the beginning of the next phase of the LMI.

In defining the scope of a final evaluation of the LMI several other issues have to be kept in mind. Firstly, it is important to measure whether market characteristics have been met in terms of societal and economic interest, that focus has remained on demand driven instead of technology push, that the flexible policy instruments chosen have provided added value, and finally that the market segment was broad enough thus avoiding the "picking of winners." Secondly, the evaluation needs to give insights that will help both public and private actors involved in the initiative to adjust and improve the instruments used. The study referred to earlier suggests that the formative elements should be particularly strong in evaluation of the initiative as policy-makers and other stakeholders must be inspired to learn and adjust.⁷⁵ Thirdly, through this analysis, new instruments could be proposed for use in future lead market or other demand-side innovation policy initiatives.

A call for the ex-post evaluation of the LMI needs to be launched in the coming months. An **ex-post** evaluation exercise will be prepared in 2011.

⁷⁵ Jakob Edler et. Al (February 2009) *Monitoring and Evaluation Methodology for the EU Lead Market Initiative – A Concept Development*.

10. OTHER APPLICATIONS OF THE LMI AND ITS APPROACH

The Lead market Communication states: "The Commission will consider completing the present LMI with action plans for other markets, if the MS and stakeholders' degree of involvement in the LMI demonstrate the feasibility of an extension of the approach and if, on the basis of the permanent monitoring mechanism to be established, new market areas responding to the identified criteria appears to be ripe for a similar initiative..." The Competitiveness Council⁷⁶ has also concluded that that the Lead Market Initiative may in the future be applied to other markets suitable for actions within this initiative, following thorough evaluation, stakeholder consultation which closely involves the Council. The 2007 LMI Communication stressed that any preferential treatment for certain sectors or 'picking the winners' should be avoided at all cost.

For most markets, it is too early to measure concrete impact on market growth and hence to draw conclusions on the effectiveness of the initiative. However, in light of the quickly evolving economic context, application of the LMI approach and more broadly of demand-side innovation policy tools to other markets might be considered in the context of the discussions on a future EU Innovation Plan called for by the European Council⁷⁷.

As an input to this debate, this chapter provides a number of suggestions for other applications of the LMI and for the design of demand-side innovation policy measures. This is by no means an exhaustive list of options.

To other market sectors

There are several industries and market segments which may be suitable for a LMI-type approach, for instance, in satellite-derived applications⁷⁸.

As discussed in the section below on new and improved identification criteria, more emphasis could be placed on fostering innovative products and services (in 2020, almost three quarters of jobs in the EU will be in services, including public services⁷⁹) that could potentially have the greatest impact on meeting societal challenges. This would establish the LMI approach as a tool to meet societal challenges at hand.

Civil society organisations and individual 'lead users' could also play a larger role in the identification of potential sectors to ensure that the innovative products and services developed truly meet the needs of consumers and potential customers.

⁷⁶ 2871st COMPETITIVENESS, (INTERNAL MARKET, INDUSTRY and RESEARCH) Council meeting Brussels, 29 and 30 May 2008

⁷⁷ December 2008 Council Conclusions

⁷⁸ For instance, the 6th Space Council Conclusions of 29 May 2009 consider "including space applications among any further selection of new lead markets under the Commission's Lead Market Initiative

⁷⁹ European Centre for the Development of Vocational Training (2008) *Skill needs in Europe – Focus on 2020*

10.1.

To new instruments on Community, national, regional and local levels

The current LMI approach applies and combines a toolbox of mainly demand-side innovation policy instruments to favour the emergence of lead markets. In the action plans of the current set of 6 sectors, the following policy instruments are used: public procurement, standardisation & labelling & certification, and other measures, such as some funding programmes to support and network activities and actors. These measures had to fulfil one more criterion; they should not interfere with the ‘subsidiarity principle’. In academic literature and in other innovation policy initiatives, other demand-side innovation policy instruments are employed⁸⁰.

In parallel, national and regional lead market initiatives with a strong international market potential could be encouraged and benefit from Community support through existing support mechanisms. This is a bottom-up approach.

Some additional demand side innovation policy instruments that could be used in a LMI-type approach are:

a. Cluster policy

Clusters harness the complementary power of geographically bringing together the actors of the ‘triple helix’ innovating companies, academia and government, as well as business users and end-users. Creating opportunities to increase cooperation between clusters, involving the whole value chain, can help in developing more competitive goods and services. Many lead market sectors are already based in specific European geographical areas, such as protective textiles. Industries and users will benefit from increasing cooperation among companies, public policy makers and users. Public policies can support clusters with some sectoral focus and transnational networking to provide an environment to create a close interaction of product designers, engineers and consumers in view of the innovations in lead market sectors and emerging markets.

Efforts also need to be undertaken to create more favourable “eco-systems” for knowledge-based clusters and emerging industries. These industries are being catalysed by new drivers for innovation, in particular social and environmental challenges such as resources limitation, pollution and waste increase, biodiversity reduction, climate change and work-force needs, and represent potentially large markets.

b. Direct financial promotion of private demand

Two types of financial support can be distinguished to stimulate demand for innovative goods and services. Under certain conditions, private or industry demanders can receive a *subsidy* or can lighten their *tax load* (tax relief). These types of instruments are nearly exclusively the competence of the Member States. Commonly, these instruments are applied to stimulate the *diffusion* of innovations. One example is the "100 000 Roof Programme" in Germany. To support the market introduction of photovoltaics in Germany, the 100 000 roof solar

⁸⁰ For example, see input paper of J Edler to the April 2009 Futuris conference : http://212.37.193.12/colloque_futuris_2009/pdf/FuturisConference09_J.Edler_3.Demand.pdf

electricity programme, a soft loan programme to private house owners who installed a photovoltaic system on their roofs, was introduced in January 1999.

Connect LMI better to supply-side innovation policies (and other policies)

Stimulating innovation in markets is often best achieved through **smart combinations of supply and demand policy measures**. Promoting coherence between demand-side and supply-side instruments should be encouraged within and with the LMI. Connecting LMI more closely to supply-side policies in the future could allow inter alia the backing of projects that cut across the phases of research, testing, procurement and deployment of innovative products and services, as proposed in some ICT sectors. Any demands to increase EU support will be made in the context of the existing financial envelope for the FP7 and other financial instruments.

In this context, and at Community level, a better coordination between the measures under the LMI and supply-side instruments such as the Recovery Plan, the Joint Technology Initiatives⁸¹, Article 169 projects and ERANets has a great potential.

The European technology Platforms (ETPs) bring together stakeholders, under industrial leadership, to define and implement a strategic research agenda and contribute to the definition of the themes in research areas of special industrial relevance. ETPs are already strongly involved in protective textiles, sustainable construction and bio-based products. Increasing the knowledge base is important in the complementary actions proposed in the action plans of the lead markets. Many ETPs are actively working in improving the market framework conditions. These activities could become more visible and more coordinated by linking them to the appropriate Lead Market initiatives.

Given their close industrial relations the ETPs could be consulted in the pre-identification process for new lead markets (as done so in 2007) providing recommendations to the Commission for new lead market areas, as well as in setting targets for actions (developments within regulation and standardisation can be relevant for the research agenda's of the ETPs) and monitoring the implementation through collaboration with the 'contact groups'.

A number of the lead markets are related to the 6 areas of the **Joint Technology Initiatives (JTI)** which are long-term public-private partnerships. Collaboration between the LMI and JTIs could benefit both, both in identifying new lead markets and market barriers in certain sectors thus helping in reacting to emerging needs for new innovative products and services. Enhanced collaboration would also foster greater synergies of research programmes across Europe. Research funding through the JTIs could also be directed to lead market areas.

To increase the linkage of research funded by the JTIs with the market and ensure interest and uptake of the market by industry the contact groups of different lead markets represent a possible interesting forum. In the different contact groups of the lead markets representation

⁸¹ JTI are a broad-based instrument that can contribute to innovation policy. They are: IMI, ARTEMIS/ENIAC, Clean Sky, For FCH

of business federations is ensured. Furthermore an interesting link can be made with the MS representatives in the contact groups. The representatives are senior policy makers at the economic and industry ministries and therefore can be an important sparing partner when discussing new research developments.

Recognize the role of user-driven innovation and link to civil society

Many companies and governments alike are starting to realize that innovation can arise not only from R&D but also from the interaction with partners, suppliers and customers. Some of the hottest properties on the Internet include second-generation Web services, such as You Tube, MySpace, Facebook and Twitter which the users themselves define. These and many more may be the basic definition of demand-side innovation, with much of the services and software prompted from the ground up by customers rather than suppliers.

This may result in new actors, such as regions and civil society (NGOs, consumer groups and 'lead users'), becoming more actively involved in future LMI processes.

Examples could be participation in stakeholder 'contact groups' where relevant, participation in web-based surveys and involvement stakeholder forums and smaller focus groups. Potential linkages have been identified in the areas of bio-based products in particular, renewable energies, sustainable construction, and recycling.

Simultaneously, groups of end-users could be engaged in awareness campaigns on new innovative products and services in the lead markets, by educating consumers through creation or distribution of marketing information, and promoting competitive forces in the markets which directly or indirectly affect consumers (transport, electricity, communication, etc.).

11. PROPOSED CHANGES FOR THE IDENTIFICATION PROCESS FOR APPLICATION OF THE LMI APPROACH TO OTHER SECTORS

The endorsement of the Lead Market Initiative by the May 2008 Competitiveness Council of the EU Member States made it clear that expansion to new areas should depend on the outcome of the mid-term progress report. It stated: “Lead Market Initiative may in future be applied to other markets suitable for actions within this initiative as well, following thorough evaluation, stakeholder consultation and closely involving the Council”.

This chapter provides an outline of the identification process used to select the current round of lead market sectors and proposes some improvements in case this process is used again.

11.1. Description of identification process used in the 1st round in 2007:

The set of criteria used to identify the 6 lead markets were outlined in Annex II of the 2007 LMI Communication⁸². The process and outcome are seen as satisfactory. The criteria referred mainly to the economic and societal impact, the European industry potential, and the potential of innovation policy instruments to have a decisive impact on the growth of the emerging market areas in Europe.

During the pre-identification phase in 2007, extensive stakeholder consultation took place with no *a priori* restriction of the number of markets to be retained for a more in-depth screening. In line with the Council’s Conclusions⁸³, broad stakeholder consultations were instrumental to the identification of suitable candidate areas. Industry experts were consulted on the appropriateness of a lead market approach and the choice of the identification criteria and asked to verify their relevance to the lead market approach. The Europe INNOVA Innovation Panels and the European Technology Platforms were also specifically invited to respond to a survey on the potential of lead markets. During this pre-identification period, several possible market segments were identified that fitted the criteria for a lead market.⁸⁴

Following the pre-identification phase, a task force was set up for each candidate lead market area. Each task force analyzed the information collected for each of the criteria, elaborated a roadmap for an action plan, and conducted stakeholder consultations in its market area. These outcomes were further discussed with industry associations, representatives from relevant member state ministries as well as user associations. In addition, DG ENTR held on a regular

⁸² Staff Working Document SEC(2007) 1730

⁸³ Council Conclusions of December 2006

⁸⁴ The main reasons for not retaining potential areas for a lead market initiative were:

-Absence of clear evidence of the existence of a sufficient potential market; That might emerge is a rather short time; That were based on clear signals from the market (demand-driven approach);

-The technology was too far from being mature and that the risk of “picking winners” and more precisely to be wrong in making such choices was too high;

-The nature of the problems encountered and respect of the subsidiary principle.

basis inter-service meetings with different DGs and taskforce leaders who came from various DGs.

The criteria used to identify lead markets can be grouped into *economic* and *policy-related criteria*:

1. The potential or interest of identified areas for Europe.

The criteria used to assess the interest of the market areas for Europe were:

- (a) Specification of the emerging market and the extent of **customer needs** and how this could lead to the development of new products and services with a global perspective
- (b) The **potential of technologies** under development and of new combinations of existing technologies for the creation of world class markets
- (c) The basis for the EU to capitalise on investments in such technologies and their applications to develop world class markets, notably in terms of existing or nascent **industrial strengths** in Europe that could develop the new markets.
- (d) Evidence of the **commitment** of industrial and service sectors to contribute to the success of the initiative, following stakeholders' consultations.
- (e) The potential of **policies** to favour the emergence of lead markets

2. The effectiveness of the policy toolbox to support the market areas to become lead markets.

The second identification category comprised the following:

- (a) Existence or lack of **regulation of markets of products and services**, which currently, or in the foreseeable future, will impede further development and market take-up of new products and services
- (b) **Standardisation** issues that would need to be addressed in a timely way to foster development and market take-up in Europe of new products and services in the considered markets.
- (c) **Intellectual property protection** issues, which presently, or in the future will impede the faster development of the emerging market.
- (d) The extent to which opportunities for the public sector, acting as a launching customer, to foster the development and market take-up of new products and services through a more innovation-oriented approach to **public procurement**.
- (e) The presence of obstacles to sufficient mobilisation of **finances** (bank, EIB Group, VC) which are specific to support the development of the new world class market to which public measures can contribute to alleviate.

The importance of the use of this criteria was most importantly to establish the presence of obstacles in the market (market failures or barriers) with a considerable delaying effect on the emergence of markets, and to prove that Community innovation policy instruments could overcome these obstacles.

Following this analysis, it was felt that it was necessary to retain rather broad definitions of the lead market areas in order to maximise the value-added of the initiative in creating

synergies between policies due to systemic interdependencies across technologies used in a broad range of markets for the products and services concerned and synergies between policy impacts

The above mentioned criteria were key determinants in the identification process, but the following conditions also had an influence on the identification process and its outcomes:

- a) The Council conclusions⁸⁵, the Aho Report⁸⁶ and the Commission's Communication on the broad based innovation strategy listed some possible domains.⁸⁷
- b) The potential of enhanced collaboration, both within DG ENTR and between different DGs, through the lead market initiative which requires input from regulatory, sectoral and policy units alike for a successful implementation. Collaborative efforts create an opportunity for better use of available resources, greater efficiency and transparency of actions.
- c) Societal benefits and sustainability were not particularly emphasised in the beginning of the identification process, but have been emphasised during the implementation phase.

Proposed changes for the identification process used for the next round and justification:

Although the process and outcome of the identification process of the first set of markets were satisfactory, a number of suggestions for minor improvements in the identification criteria and the identification process are listed here.

The focus of the identification criteria on the economic potential of the markets and the efficiency of demand-side policy instruments in these markets are obvious criteria which should continue to be in focus in a new identification round. The focus on a systemic coordination of the various demand-side policy instruments has further been considered as a positive and valuable approach towards getting innovative products and services to the market. Based on lessons-learned in the first identification round, the following changes are proposed.

Identification criteria:

- Use qualitative and quantitative data more systematically to set the baseline for monitoring and evaluating the economic potential of a lead market and the efficiency of policy instruments (added value of European level intervention) in decreasing obstacles.
- Place more focus on assessing the potential of innovation diffusion outside Europe, such as through review of markets exhibiting similar market conditions

⁸⁵ December 2006 Council Conclusions

⁸⁶ The Aho report (2006) Creating an Innovative Europe

⁸⁷ This notably concerned markets related to areas such as low carbon technologies, eco-innovation, e-health, intelligent transport systems, digital content, energy efficiency, bio energy/biotechnology, nano-technology, satellite navigation and earth observation, security, ICT and marine technologies, including mineral resources, intelligent near-zero energy building, well-being and culture, ageing population-related markets, climate change-related markets, new concepts for markets in the automobile sector, and textiles.

- Set societal benefits as a criterion with set indicators for measuring the contribution of a lead market to the societal challenge at hand.

Identification process:

- Facilitate earlier and greater involvement of Member States in the pre-identification process
- Involve a broader range stakeholders, including civil society, notably NGOs and consumer groups, as well as Joint Technological Initiatives (JTIs), in the pre-identification process. Ensure continued strong involvement of industry, ETPs and other industry federations.

In more detail:

More ex-ante in-depth analysis of determinants of innovation take-off, and of market and policy failures is needed

During the 2007 identification process, a large, heterogeneous set of data sources was used to analyse the determinants of innovation take-off and market and policy failure in the identification phase. In the future, more systematic in-depth examination on the determinants of innovation take-off would help in further defining the market or policy failures. A way of doing this is for example by looking at the market characteristics in terms of structure (number of players, entry/exit conditions, costs structure, characteristics of demand and commercial characteristics), conduct (strategic patenting, use of standards, characteristics of innovation activity, asymmetric information, etc.) and performance (prices, employment, etc.).

A more in-depth analysis on market failures would also provide a better grounded baseline for systemic monitoring of the progress and final evaluation of the impact of each of the lead markets. Here the examination could for example focus on a) the societal and economic benefits from the *innovation*, b) *costs of adoption* (acquisition, complementary investments and learning, c) *market size and its growth potential* (e.g. sales forecast), *industry environment* and *market structure*, and d) *network effects*, the potential for diffusion of innovation in the world market.

Stronger link the potential of societal benefits as a criterion with set indicators for measuring the contribution of a lead market to the societal challenge at hand

While in the first identification phase, societal benefits were also considered, there is a scope to stronger link the assessment of potential societal benefits in the identification process. With a stronger focus on societal benefits, Member States and the public alike can see innovation, not as an end in itself, but as a means to tackling real societal challenges, such as carbon emissions and an ageing society. This criterion is closely linked to a market failure analysis and would also contribute to making the LMI consistent with the current focus of a challenge-

based innovation policy approach.⁸⁸ A stronger focus on societal benefits is also a way of recognising the importance of demand-side policies and users in driving innovation and the importance of coordinating the use of public instruments to foster innovation, such as in public services and sectors that are less knowledge-intensive.

Focusing on these areas implies a strong role for government as sophisticated lead buyers. About 45% of the EU's GDP is dedicated to public expenditure and the public service represents over 15% of the total employment in the EU. Government can also apply their regulatory prowess by taking action to overcome fragmentation in regulation, which is hampering market growth. At the same time, government may use targeted legislation to catalyse a market transformation process (for example in environmental regulation). Here a public commitment is needed to provide a forward-looking framework conditions at EU level to and to provide public funds to test prototypes and foster the uptake of new innovative products and services needed to meet current and future societal challenges by acting as a "launching customer" through public procurement.

In the face of the current economic crisis, many European governments have adopted Keynesian demand-side economics which stipulates a strong role for the state in stimulating the economy during recessions by injecting considerable amounts of money into the economic system through both "bail out" and "stimuli" packages. The broad objective is to stimulate demand, create employment and prevent the economy from contracting. Europe's post 2010 Lisbon Strategy's vision is likely to focus on sectors that are going to be future drivers of growth and employment, such as health, well-being, sustainable energy, eco-innovation, knowledge and education. Thus stimulus packages not only have to save jobs but create new ones in the future. For LMI this implies that focus should be placed on areas where there are problems to solve, such as decreasing energy intensity, sustainable development, providing better security for citizens as well as better health-care services.

Some future societal challenges whereby the Lead Market Initiative's approach could be applied are providing opportunities in the transition to a low-carbon economy, healthcare/ 'active ageing' and social innovation.

Better assess the potential for diffusion of innovation outside Europe

More concrete analysis should also be done on the **added value of a European-level intervention** and the potential for diffusion of innovation in the world market. Diffusion of innovation was stressed in the previous identification process but the main focus was on the European market. Thus there is room for improvement in the identification process regarding the **potential for diffusion of innovation outside Europe** which would also be more in line with the concept of lead markets.

⁸⁸ This challenge-based or problem-driven approach represents a new type of innovation process that contrasts with more linear methods of idea generation, selection and development. In particular, challenge-based innovation provides a sharper focus for new forms of collaboration made possible by the dramatically lowered costs of organisation via the web. Web-based tools and the new forms of collaboration they support are making the boundaries of organisations even more porous as groups from inside and outside the organisation can form to address specific challenges.

Involve a broader range stakeholders

In a new identification process a balance between sound analysis and broad involvement of stakeholders on the one hand, and on efficiency on the other, should be secured. Relevant **stakeholders may be** asked to contribute earlier when suggesting potential new lead markets, such as through open, sector-related business forums and by answering questionnaires and surveys. A strong involvement from **industry** in the identification process remains a key element for the successful implementation of the initiative.

Civil society, such as NGOs and consumer groups, were not specifically included in the last identification round. These groups take, however, part in some of the stakeholders' groups ('contact groups' – see chapter 2) that have been put in place for each of the lead markets to oversee and follow the implementation of the current action plans. Civil society organisations can provide valuable input regarding user-driven innovation and societal needs.

At the same time, links can be built with strategic initiatives such as the Joint Technology Initiatives⁸⁹ and the Public Private Partnerships established under the Recovery Plan and other public-private. The European Technology Platforms are already successfully embedded in the activities of most of the current lead markets.

⁸⁹ JTI are a broad-based instrument that can contribute to innovation policy. They are: IMI, ARTEMIS/ENIAC, Clean Sky, For FCH

ANNEXES

Annex 1: Table of actions per sector, per type of instrument and timing of completion of action

Annex 2: Extracts from the Proposal for a Directive of the European Parliament and of the Council on the application of patients' rights in cross-border healthcare

Annex 3: References and further reading

eHealth

	Actions completed (5/20)	Actions started, short term implementation (still in 2009) (3/20)	Actions started, Long term implementation (5/20)	Actions not started yet (7/20)
Legislation	<p>Action 4: Adopt Recommendation on eHealth interoperability</p> <p>Action 7: Issue guidelines for certification of eHealth applications</p> <p>Action 9: Screen existing EU legislation related to eHealth and provide clarification and guidance for applying the legal framework for eHealth products and services</p> <p>Action 10: Analyse possibilities for adoption of a legal initiative for eHealth and telemedicine</p>		<p>Action 5: Favour the application of Recommendation on eHealth interoperability by enhancing cooperation between MS to build coherence in their health systems</p> <p>Action 11 Adopt initiative to enforce Personal Data Protection legislation for products and services</p>	<p>Action 2: Introduce eHealth Innovation Scorecards/ Benchmarking to monitor eHealth performance in Member States (MS) and facilitate learnings/ learning. Despite small delays, it is expected that the study will be launched in 2010.</p> <p>Action 13 Introduce the Electronic Health Insurance Card. Deadlines are not met due to sensitivity of the issue. Discussions are ongoing.</p> <p>Action 14: Improve legal clarity regarding medical reimbursement based on recommendations from the Health Services Initiative. The action is delayed due to the long process of the</p>

				adaptation of the directive.
public procurement			<p>Action 19 Promote networking and cooperation among public procurers in the development process of new solutions.</p> <p>Action: 20 Associate procurers in consultation process for CIP and FP7 calls for proposals</p>	
Standardisation/certification				Action 6: Define required standards, establish review committee to identify focus areas. The group's first-year report has been submitted.
Complementary actions	Action 1: Launch pilot actions under the Competitiveness and Innovation Program (CIP)	Action 3: coordination actions including exchange of best practices at i2010 sub-group meetings and annual eHealth conferences . A High Level Group was launched in 2008.	<p>Action 15: Provide citizens with relevant and up-to-date information on cross-border health services:work of the i2010 MS group and the ECs Health Portal.</p> <p>Action 16 Provide guidance</p>	Action 17 Strengthen R&D on ICT for Health in FP7 and in Member States programmes: A study will be conducted on 'Monitoring eHealth Strategies.
		Action 8: Form expert group		

		<p>to encourage MS to establish a coordinated work program: eHR-Q-TN (3 year contract)</p> <p>Action 12): Promote knowledge and information dissemination on safe and secure eHealth products and use of existing infrastructure to protect consumers – networks, best practice repositories, hotlines: publication is planned for May 2009.</p>	<p>on financing from such funding mechanisms as the EU structural funds and European Investment Bank initiatives specific to eHealth domain – workshops, networks etc: 1st meeting was held on Feb 2009.</p> <p>Action 18 Strengthen cooperation between national and community R&D testing and pilots, involve users in RTD actions: The 3rd CIP call has been evaluated. The pillar is foreseen to be operational from January 2010.</p>	
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Sustainable construction

	Actions completed (2/11)	Actions started, short term implementation (still in 2009) (4/11)	Actions started, Long term implementation (4/11)	Actions not started yet
Legislation			<p>Action 2: Recasting of the Energy Performances of Building Directive: Proposal was adopted by the Commission in November 2008, common position is expected with next EP.</p> <p>Adoption of Renewable Energy Directive COM/2009/28 in 2009</p> <p>Action 8 Construction Products Regulation and sustainability requirements: THE CPR proposal is expected to be adopted in 2009/2010 by the Council and the EP.</p>	<p>Action 1 and 3 screening national building regulations Operational concept is discussed in April 2009. Action is delayed due to the complexity of undertaking a systemic screening.</p>

public procurement			Action 5: Establish a network between public authorities in charge of procuring sustainable construction: Two networks in the area of sustainable construction will start around September 2009.	
Standardisation/certification		Action 10: Alternative warranty/label schemes related to construction insurance: Early results were presented in April 2009, the study will be completed in March 2010.	Action 7 Widening the scope of European codes for construction design (Eurocodes 2nd generation): CEN has started and preliminary results are expected in 2009. Action 6 Framework, assessment method and benchmarks for the assessment of sustainability performances: The call is closed and the projects are under evaluation, the projects are expected to start in 2011.	
Complementary actions	Action 9: SMEs guide on collaborative working schemes in construction	Action 4: Guidance and pilot schemes on award criterion and life cycle cost use: Action		

	projects: Completed in March 2009. Action 11 EU-wide strategy to facilitate the up-grading of skills and competencies in the construction sector: Completed in March 2009.	will be completed in October 2009.		
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Protective textiles

	Actions completed (1/10)	Actions started, short term implementation (still in 2009) (2/9)	Actions started, Long term implementation (5/9)	Actions not started yet (2/9)
Legislation			Action 1 Adoption of the regulation ⁹⁰ and decision ⁹¹ within the framework of the revision of the New Approach to technical harmonisation proposed by the Commission. Adoption in 2008. Revision of the PPE Directive was restarted in November 2008 with the aim of having the Commission proposal adopted in late 2010, early 2011.	
Public procurement			Action 3 Establish a network between public authorities in charge of procuring protective textiles: A network has been retained	

⁹⁰ Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products and repealing Regulation (EEC) No 339/93.

⁹¹ Decision No 768/2008/EC of the European Parliament and of the Council of 9 July 2008 on a common framework for the marketing of products, and repealing Council Decision 93/465/EEC.

			for funding.	
Standardisation/certification			Action 4 and 5: Support the SME involvement in PPE standards/Promote where appropriate the development and use of informal standards for innovative products and services in these market areas: progress has been slow but should accelerate (standardisation is in industry LMI road map and the CEN 'PPE sector forum has resumed its activities).	
Complementary actions	Action 7 Increase the knowledge base: 7 protective textiles related proposals were selected. Contract negotiations were finished in April 2009. Projects will run for several years.	Action 6 Devise a strategy for an anticipatory approach to products and markets: Roadmap delivered in April 2009. Action 9 Conduct sectoral IPR awareness and support action under CIP: Guide on IPR will be ready in June 2009. First seminar is planned for early October 2009.	Action 10: Improve access to markets of third countries: Efforts take place in ongoing WTO/Doha Development Agenda and bilateral FTA.	Action 2: Set-up an information and training platform for buyers and users of protective textiles: Industry action to complement Commission action in public procurement: training platform is foreseen in industry road map. Action 8 Encourage the development of clusters and other forms of local collaboration (incubators,

				open innovation platforms) involving purchasers and users: Efforts to get MS and regional authorities more involved will be increased.
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Bio-based products

	Actions completed (7 action items or sub-items completed)	Actions started (short term implementation in 2009) (6 action items or sub-items are near completion)	Actions started (long term implementation) (6 action items or sub-items have started)	Actions not started yet (2 action items or sub-items have not started yet)
Legislation and policies	Action 1: Establish an advisory group, including Member States and industry	Action 2: Analyse the impact of legislation and policies. Report to be issued in 2009.	(Action 2) Implementation of actions to ensure that legislation and policies are coherent and promote the market entry of bio-based products.	
Public procurement	Action 4: Encourage Green Public Procurement for bio-based products. The Green Public Procurement (GPP) Communication proposes ways in which guidelines now include criteria that allow bio-based products to be given preference in tender specifications.	(Action 4) Report to be issued in 2009 on e.g. ways to verify bio-based content claims, possibility of developing a list of product groups and designated bio-based products, setting of minimum levels of bio-based content for each product group, ensure international harmonisation of policies to promote GPP.	(Action 4) Encourage contracting authorities in all EU Member States to give preference to bio-based products in tender specifications. Encourage national GPP action plans.	Action 3: Establish a network between public purchasers of bio-based products. The call for proposals was not successful for bio-based products.
Standards, labels and	Action 5: Standards, labels and certification.	Standardisation work was successfully launched in	Programming work was successfully launched in	

certification	<p>Two standardisation mandates submitted to CEN, CENELEC and ETSI in 2008. Accepted by CEN in 2009.</p> <p>The European Eco-label now also covers bio-based products. Products like e.g. plastic, textiles, lubricants, and detergents made from renewable raw material can thus carry the Eco-label.</p>	<p>March 2009 in response to Mandate 53/2008. CEN has started drafting Technical Specifications on bio-plastics and bio-lubricants. A functioning organisational structure for this work has been set up. Technical Specifications to be published in mid-2010.</p> <p>Develop a common methodology for Life Cycle Assessment (LCA): work to be completed in 2009.</p> <p>Propose suitable labels for bio-based products; ensure a harmonisation of labelling and common criteria for bio-based products.</p>	<p>March 2009 in response to Mandate 52/2008. It aims to create a work plan for elaborating standards for all types of bio-based products. It will guide future decisions, including possible future Commission mandates. CEN's indicative timeline is mid-2010.</p> <p>Propose and implement the elaboration of normative documents for LCA methodology related to bio-based products, e.g. European guidance documents, technical reports, standards, etc.</p> <p>Develop a methodology for information about sustainability of biomass production (JRC project).</p>	
Complementary actions for bio-	Action 6: Complementary actions for bio-based	(Action 6) Eurobarometer survey in 2009 including	(Action 6) Promote the establishment of	(Action 6) Conduct an information campaign via

<p>based products</p>	<p>products.</p> <p>A mapping of existing biorefineries at pilot plant or demonstrator scale in Europe has been carried out and the results are found on a web site⁹².</p> <p>A FP7 joint call for biorefinery research has been successfully carried out. Projects are underway.</p>	<p>questions on the public perception of bio-based products. The report will be available in the autumn of 2009.</p>	<p>strategically important biorefinery pilot plants and demonstrators. The mapping of biorefineries can be used as a tool to promote the production of various biochemicals and bio-materials. The mapping shows that there are many facilities already available, while others are currently in the process of being established, and this knowledge should be used to pool resources and set up collaborative projects in Europe.</p>	<p>different media with focus on SMEs. Before any information campaigns aimed at consumers are launched, it is necessary to put in place a transparent technical framework for evaluating bio-based products and verifying their capabilities objectively. For this, standards, certification procedures, and labels need to be agreed upon.</p>
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⁹² http://www.bio-economy.net/bioeconomy/member_states/index_bioeconomy_member_states.html

Recycling

	Actions completed (5/15)	Actions started, short term implementation (still in 2009) (2/15)	Actions started, Long term implementation (8/15)	Actions not started yet
Legislation	<p>Action 1 Waste Framework Directive was adopted by the Council October 21st, 2008</p> <p>Action 9 Raw Materials Initiative (Nov 2008 published)</p> <p>Action 13 State Aid guidelines on eco-innovation and waste management: published April 2008</p>		<p>Action 2 Review of Relevant Waste Directives: Revision of EU legislation on electrical and electronic waste on December 3rd, 2008, Council/ EP in 2009. Targets till 2016.</p> <p>Action 6 Boosting Resource Productivity: Nov 2008 Communication on Raw Materials and revised Ecodesign Directive</p>	
public procurement	<p>Action 3 Communication on Green Public Procurement: package published on July 16th, 2008</p>		<p>Action 5 Establish a network between public authorities in charge of procuring recycling products: no proposals dealing with the recycling sector was submitted.</p>	

Standardisation/ certification			Action 8 CEN Packaging and Environmental Standards: informal dialogue with CEN has started	
Complementary actions	Action 14 Market Surveillance; report presented at Environmental Council of March 2009	Action 10 CIP call (2008) for proposals on eco-innovation projects – recycling: Funded 40 projects to start in 2009 Action 15 Studies on Sustainable Management of Resources; framework contract to start in March 2009, input for 2010-2011 to support policy development	Action 4 Championing eco-innovation policy (ETAP-CIP call): projects to start autumn 2009 Action 7 End-of-Waste Criteria Studies carried out by JRC Action 11 Call for proposals on eco-innovation observatory: The call is closed and the observatory will be launched in June 2009. Action 12 Research and Development: A number of applied R&D activities have been taking place.	

Renewable energy

	Actions completed (0/18)	Actions started, short term implementation (still in 2009) (4/18)	Actions started, Long term implementation (11/18)	Actions not started yet (3/18)
Legislation			<p>Action 1: The RES directive was adopted by the Council on 6 April 2009.</p> <p>Action 2: Require national action plans that set out interim and sectoral targets and pathway to those targets, allows for statistical transfers of renewable energy between Member States and joint projects to facilitate reaching the EU and national renewable energy targets (linked to RES, due 2010)</p> <p>Action 3: Set out environmental sustainability criteria for biomass: A Communication is foreseen</p>	

			before the end of 2009. Action 5: Provide guidelines for authorisation procedures (linked to RES)	
public procurement			Action 9-A Establish a network between public authorities in charge of procuring renewable energy products: No proposals were submitted in this area.	
Standardisation/certification		<p>Action 10: Begin the process of adopting minimum energy performance standards: The study published before the end of 2009, follow-up proposal for minimum energy efficiency requirements in 2010.</p> <p>Action 12: Development of a biofuels sustainability regime in the new renewable energy legislative framework: The RES directive specifies a sustainability criterion for bio fuels. A committee will be set up in 2010.</p>	<p>Action 6: Incorporate renewable energy in building codes. This is foreseen in the RES Directive, adopted on 6 April 2009.</p> <p>Action 11: Ensure that appropriate measuring methods will be developed on time through CEN/CENELEC or other appropriate means.</p>	

<p>Complementary actions</p>		<p>Action 13: Provide guidance on financing from such funding mechanisms as the EU structural funds, European Investment Bank and FP7 Communication on the financing of low-carbon technologies is foreseen late 2009</p> <p>Action 15: Publish and disseminate a guide on how to establish collaborative working schemes in renewable energies, general provision of contractual, management and insurance rules as well as good practice for SMEs: under preparation, but no deadline given. (This action is considered to be dropped?)</p>	<p>Action 4: remove planning and certification barriers to uptake of renewables: Adaptation of RES Directive. This is foreseen in the RES Directive, adopted on 6 April 2009.</p> <p>Action 7: Eliminate red tape for SMEs This is not linked to RES.</p> <p>Action 8: Bring into the market and speed up the massive deployment of some RES technologies through actions of implementation of the SET Plan especially European Industrial Initiatives: Implemented via the SET-linked FP7 calls.</p> <p>Action 14: Strengthen the EU support through e.g. CIP-IEE, LIFE+, FP7, or Structural Funds to bridge the gap between successful</p>	<p>Action 16: Propose background information for future qualification needs and develop best practices to facilitate the upgrading of skills and competencies in renewable energies : A study on future needs for skills will be launched in the second half of 2009.</p> <p>Action 17: Improve the knowledge on barriers to disseminate the renewable energy technologies and their implementation all over the world: addressed by the RES Directive.</p> <p>Action 18: Increase the knowledge on the effective barriers of development of a demand for renewable energy: Status?</p>
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			demonstration of innovative technologies and effective market entrance. (ongoing)	
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ANNEX 2 EXTRACTS FROM THE PROPOSAL FOR A DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL ON THE APPLICATION OF PATIENTS' RIGHTS IN CROSS-BORDER HEALTHCARE

Article 5

"Responsibilities of the Member State of treatment

1. Cross-border healthcare shall be provided in accordance with the legislation of the Member State of treatment and according to standards and guidelines on quality and safety defined by that Member State.
2. The Member State of treatment shall ensure that:
 - (a) patients receive upon request information on standards and guidelines referred to in paragraph 1, including provisions on supervision and assessment;
 - (b) healthcare providers provide individual patients with information on availability, prices and quality and safety of the healthcare provided, , as well as with details of the healthcare providers' authorisation, their insurance cover or other means of personal or collective protection with regard to professional liability;
 - (c) patients have means of making complaints and that there are mechanisms in place for patients to seek remedies and compensation when they suffer harm arising from the healthcare they receive;
 - (d) systems of professional liability insurance or a guarantee or similar arrangement, which are equivalent or essentially comparable as regards their purpose and which are appropriate to the nature and the extent of the risk, are in place for treatment provided on its territory;
 - (e) patients have guaranteed access to their medical records and that the fundamental right to privacy with respect to the processing of personal data is protected in conformity with national measures implementing Community provisions on the protection of personal data, in particular Directives 95/46/EC and 2002/58/EC.
3. Patients from other Member States shall enjoy equal treatment with nationals of the Member State of treatment.

Article 7

"National contact points for cross-border healthcare

1. Each Member State shall designate one or more national contact points for cross-border healthcare and communicate their names and contact details to the Commission.
2. National contact points shall cooperate with each other and with the Commission. National contact point(s) of the Member State of affiliation shall provide patients on request with contact details of national contact point(s) in other Member States.
3. National contact point(s) in the Member State of treatment shall provide patients with information concerning a list of healthcare providers, information on quality and safety standards and guidelines, patients' rights according to legislation of the Member

State of treatment, procedures for complaints and for seeking remedies and compensation when they suffer harm arising from the healthcare they received.

4. National contact point(s) in the Member State of affiliation shall provide patients with information referred to in Article 6(2).

The information shall be easily accessible, including by electronic means.

Article 14

Cooperation on eHealth, including telemedicine

1. Member States shall facilitate cooperation in the area of eHealth, including telemedicine. They shall aim at interoperability of information and communication technology systems through in particular specifying the necessary standards and terminologies for interoperability, applicable whenever a Member State decides to introduce them.
2. In order to facilitate cooperation between Member States, the Commission shall, in accordance with the procedure referred to in Article 17(2) adopt guidelines concerning, in particular, interoperability of information and communication technology systems."

ANNEX 3: ADDITIONAL REFERENCES, DATA RESOURCES AND SELECTED BACKGROUND READING

- On the LMI and demand-side innovation policy:

AHO Group Report (January, 2006) Creating an Innovative Europe:

http://ec.europa.eu/invest-in-research/pdf/download_en/aho_report.pdf

Beise, M. (2004), Lead markets: Country-specific drivers for the global diffusion of Innovations, Research Policy, vol. 33, pp. 997-1018.

Beise, M. (2001), Lead Markets: country-specific success factors of the global diffusion of innovations, Heidelber: Physica, ISBN: 978-3-7908-1430-9

Edler, J. Futurist Input paper, http://212.37.193.12/colloque_futuris_2009/ressources.htm.

Edler, Jakob, Luke Georghiou, Elvira Uyarra, Deborah Cox, John Righty and Yanuar Nugroho (March 2009) Monitoring and Evaluation Methodology for the EU Lead Market Initiative – A Concept Development, European Commission ProINNO Publication, http://grips.proinno-europe.eu/knowledge_base/view/765/monitoring-and-evaluation-methodology-for-the-eu-lead-market-initiative/.

Georghiou, Luke (September 2006) *Input* paper on the project Globalisation Challenges for Europe and Finland, meeting at The Secretariat of the Economic Council

- Some relevant data resources for the LMI:

European Innovation Scoreboard (2007), http://www.proinno-europe.eu/admin/uploaded_documents/European_Innovation_Scoreboard_2007.pdf.

Innobarometer (February 2009):

http://www.proinno-europe.eu/admin/uploaded_documents/Innobarometer_2009.pdf.

INNO-Trend Chart Studies (Dec 2008 – March 2009), available at <http://www.proinno-europe.eu/index.cfm?fuseaction=page.display&topicID=52&parentID=52>