European Commission

ROADMAP			
TITLE OF THE INITIATIVE	Joint Technology Initiative in the field of Bio-based industries		
LEAD DG – RESPONSIBLE UNIT	RTD.DDG3.E.2	**DATE OF ROADMAP**	I-III/2013

This indicative roadmap is provided for information purposes only and is subject to change. It does not prejudge the final decision of the Commission on whether this initiative will be pursued or on its final content and structure.

A. Context and problem definition

(1) What is the political context of the initiative?
(2) How does it relate to past and possible future initiatives, and to other EU policies?
(3) What ex-post analysis of existing policy has been carried out? What results are relevant for this initiative?

(1) What is the political context of the initiative?

The initiative fits under the overall umbrella of the Europe 2020 strategy, which has highlighted the building of a bioeconomy by 2020 as one of the deliverables under its flagship initiative "Innovation Union". It also directly responds to the strategy and action plan for a sustainable bioeconomy in Europe (COM (2012)60 final, Innovating for sustainable growth: a bioeconomy for Europe). In particular, the initiative focuses on the segment of the bioeconomy that uses renewable biological resources in industrial processes (i.e. bio-based industries) for manufacturing biomass-derived goods/products. This includes industrial sectors which traditionally use biological resources as their main feedstock (forest-base sector, starch, sugar, biofuels/bioenergy, biotechnology) and others for which biomass is part of the raw material portfolio (e.g. Chemicals, Plastics, Consumer goods).

Fostering the development of a strong and globally competitive bio-based industry in Europe contributes to EU2020 through enabling (1) *smart growth* by driving innovation for the development of knowledge-intensive bio-based products and processes, (2) *sustainable growth*, as the move towards renewable resources (including biowaste/bioresidues) and eco-efficient processes is to result in greening the industrial production. (3) *inclusive growth*, as growing use of land and water to produce raw materials for an expanding market of bio-based products will lead to new and additional job opportunities in rural and coastal areas. It is furthermore expected that additional jobs will be created based on new activities related to industrial processing of renewable resources, e.g. in biorefineries and in other industrial areas.

The initiative is expected to deliver the technological breakthroughs that will allow cost-competitive and sustainable conversion of biomass into industrial products and fuels/energy in so-called biorefineries, so that they can compete in price and quality with products based on fossil resources, all with reduced environmental footprint based on life cycle analysis. By mimicking current fossil refineries, biorefineries maximise the value derived from biomass by using all its components to produce materials, chemicals and energy. They allow not only the replacement of conventional products by their bio-based equivalents but also the development of novel products with entirely new and innovative functionalities and potential for new and existing markets. The use of large quantities of biomass in biorefineries calls however for a careful sustainability assessment to accommodate the intrinsic requirement for sufficient and safe food and feed along with the protection of the natural resources, notably: soil, water and biodiversity.

The Commission proposes to support industrial research and innovation through a Public Private Partnership (PPP) in the form of a Joint Technology Initiative (JTI). In this way, the European bio-based industry and other stakeholders can take a leading role in the definition of the strategic priorities, the elaboration of the research and innovation agenda and its implementation. The Bioeconomy action plan (COM (2012)60 final), mentioned the establishment of a research and innovation Public Private Partnership (PPP) for bio-based industries. The reference to such PPP is also included in the Commission proposal for Horizon 2020 in relation to the implementation of its pillar "Better Society". This initiative relates specifically to the sub-challenges: "Sustainable and competitive bio-based

industries" and "Alternative fuels and mobile energy sources".

(2) How does it relate to past and possible future initiatives, and to other EU policies ?

The proposed initiative has strong links with the following EU policies and initiatives:

The *Common Agricultural Policy (CAP)*: through creating new markets for biomass while safeguarding a sufficient food and feed supply and protection of natural resources. In particular, it will link with and complement the *European Innovation Partnership* on *Agricultural productivity and sustainability*, proposed in February 2012. The Partnership would build a bridge between cutting-edge research and technology and the farmers, businesses and advisory services in need of them.

Lead Market Initiative (LMI) in Biobased Products (COM(2007)860): The LMI complements the research and innovation component of the proposed JTI with targeted demand-side actions in the field of bio-based products, such as public procurement, and the establishment of appropriate technical standards and regulatory measures. The proposed initiative will in turn allow to directly address R&D&I needs for the LMI.

EC "Climate and Energy Package", and notably the Directive 2009/28/EC on the promotion of the use of energy from renewable sources and the "Strategic Energy Technology Plan" (SET Plan, COM(2009)519). It is also of high relevance for the "Energy Roadmap 2050" (COM(2011)885/2) and for the forthcoming Communication "*Renewable Energy: a major player in the European energy market*".

Regional development: The development of biorefineries utilising local resources can contribute to regional Smart Specialisation Strategies and it requires a strong partnership between regional authorities, the business community and stakeholders from research and academia.

Seventh Framework Programme for Research and Technological Development (FP7): Research in the field of bio-based industries has been supported mainly by four Themes of the Cooperation Specific Programme, namely Theme 2 – Food, Agriculture and fisheries, biotechnology, Theme 4 – Nanosciences, nanotechnologies, materials and new production technologies, Theme 5 – Energy and Theme 6 – Environment. The proposed initiative builds upon this research line and pushes it forward.

EU Forest Action Plan and its key action "encourage research and technological development to enhance the competitiveness of the forest sector". In particular, the recommendation to the European Commission to monitor carefully the implementation of the strategic research agenda prepared by the forest-based European technology platform (ETP). It is expected that certain elements of this agenda will be taken up by this JTI since the forest-based sector ETP is one of its members.

It is important to highlight that the proposed JTI and the previously mentioned policy initiatives are complementary and mutually interconnected. Thus, success of bio-based industries does not only depend on technological breakthroughs but equally depends on policy support. For instance the production of the raw material (CAP) basis is interconnected with the development of product standards for the commercialisation of bio-based products (LMI).

(3) What ex-post analysis of the existing policy has been carried out and what results are relevant for this initiative?

A number of ex-post studies were considered in preparation of the proposed initiative:

- ◊ Final Evaluation of the Lead Market Initiative. It highlights the development of European level standards on biobased products as a key achievement of the initiative to underpin the future sustainability of the sector. It emphasizes that stakeholders have requested the European Commission appropriately align and develop the sector through its broader innovation, agricultural and research policies.
- ◊ Ex-post impact assessment of FP6.
- ◊ FP7 Interim Evaluation. It is not conclusive as to whether FP7 has reversed the decline in industry participation seen in previous FPs. It acknowledges a wide range of evidence that small businesses

are more easily deterred by ‘complexity’ in procedures and delays in contracts.

◊ JTI Interim evaluations and resultant recommendations in terms of legal, administrative and scientific/technological management. For the latter, it is recommended to establish a pro-active scientific/technological management focused on the achievement of the initial technological targets.

These studies suggest the need to better align Commission innovation, agricultural and research policies in the field of bio-based products and to create more effective mechanisms to attract industry and SMEs to participate in Community research and innovation programmes. As for the scientific and technological management of the initiative, it will build upon the following three elements: well thought-through initial time planning, strong monitoring and evaluation, proactive time management including possible reprioritisation and reallocation of resources.

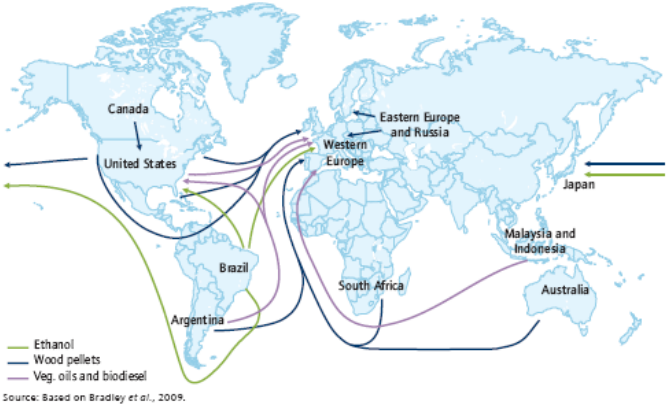
What are the main problems which this initiative will address?

The era of economic growth supported by an ever expanding and non-sustainable use of fossil resources is rapidly coming to an end. Europe is committed to excel in smart, inclusive and sustainable growth, hence it needs to champion the use of sustainable bio-based resources as a major source of raw material for conversion into innovative industrial products and fuels/energy. This must be achieved without creating shortages in food and feed supply and in due respect of the environment. Europe's bio-based industry needs to be technologically prepared and equipped to successfully address this challenge.

Europe can build on a strong foundation. It is at the forefront in terms of industrial biotechnology research. It has strong industrial sectors processing biomass such as forestry, starch, sugar and biofuels. Europe's strong chemical sector is increasingly using biomass as a raw material. Some of the world leaders in the industrial biotechnology industry (e.g. enzymes) call Europe home.

Nevertheless, there are serious threats to Europe's competitive position in developing a strong bio-based industry. Countries such as the US, Brazil and China are aggressively pushing the development of industrial biorefineries, mainly drawing on massive use of food crops (corn, sugarcane) which they have available in large quantities. These are not only technologically easy to convert, but have seen remarkable yield improvements due to successful breeding programmes. Europe suffers from competitive disadvantages with regard to the production of this type of biomass. Also it deliberately gives a high priority to other issues, such as sustainability. Therefore, Europe needs to overcome the "first mover" advantage of its major global competitors by the accelerated development of technology capable to process its own sustainable resources that do not compete with food and feed: residues from agriculture and forestry, municipal and industrial biowaste, dedicated crops grown on surplus or marginal lands and aquatic resources such as algae. Otherwise, it risks developing an excessive dependency on importation of biomass or even worse on fully processed bio-based products (see IEA roadmap, 2011)

Figure 12: World biomass shipping today



Source: Based on Bradley *et al.*, 2009.

In order to maintain competitiveness, the following research and innovation challenges need to be addressed :

- Develop leadership in technologies related to **conversion processes for "complex" feedstocks** : A substantial share of feedstock should be derived from sustainable sources in Europe. The European climate and geography are well suited for the production of lignocellulosic and herbaceous crops. Coordinated multidisciplinary action is required for the development of conversion processes making use of this type of feedstock competitive with first generation feedstocks (usually foodcrops). This also applies to agricultural and forest residues, both abundantly available in Europe, and to aquatic resources (e.g. algae).

- Deliver innovation to ensure **competitive feedstock supply** : Competitiveness of European industry requires security of raw material supply. Compared to fossil resources which have a stable composition, biomass feedstocks are scattered, variable and seasonal. Research and innovation is needed to align the development of optimised crops, sustainable agricultural technologies, post-harvest technologies and logistical solutions, in line with industry needs in biorefineries.–

- Deliver innovation to enable **smart use of biomass :** Biomass is a limited resource with a number of competing uses. Competition for biomass between food/feed, industrial and energy applications is expected to worsen with the decline of fossil resources and the associated price increase. Smart use, prioritising high-value applications with use of residual biomass for ones with lower added value but without creating shortages in food and feed supply needs to be developed by reinforcing research cooperation along the value chain and across sectors. This will allow to deal with the expected scarcity and to maximise the value derived with sustainability as a guiding principle.

- Overcome **infantile biorefinery development and lack of cross-sectoral integration** of biobased industries by bundling innovation efforts : The development of the current petrochemical industry, with a system based on family trees of platform chemicals, took more than 100 years. Biorefinery development needs to be accelerated by overcoming fragmentation and by identifying and exploiting cross-sectorial synergies.. Technological breakthroughs are needed on conversion processes (biochemical and thermochemical) for upgrading existing bio-based industries (e.g. pulp and paper mills, biofuels, starch, chemical, etc) into integrated biorefineries (i.e. multi-feedstock, multi-product) and the development of new integrated biorefinery models (e.g. lignocellulosic, green grass, algae). The challenge is for Biorefineries to respond to existing market projections,: advanced biofuels should contribute up to 4% of EU transportation energy needs by 2020, (b) achieve 10 fold growth in the European market for biobased polymers including bioplastics by 2020 compared to 2010 figures, (c) 30% of overall chemical production is bio-based by 2030.

- Conduct pre-normative research to support an **accelerated development of the emerging market of bio-based products** in close cooperation with policy initiatives such as the LMI on bio-based products. The successful market uptake of new bio-based products and bioenergy/fuels calls for the development of standards, labelling and certification systems and achieving customer acceptance.

- **Fostering industry leadership and long term commitment** in research and innovation related to bio-based industries **:** Europe's difficulties to bridge the 'innovation gap' and bridging the "valley of death" between technology development and commercialisation very pertinently apply to the field of biorefineries which require significant investments. These are typically beyond the financial reach of individual private companies, and therefore require public funding. It is acknowledged that some other regions in the world apply multiple support mechanisms for the biorefinery industry focusing on demonstration and commercial application. For instance the US Biorefinery Assistance Program provides loan guarantees to develop, construct, and retrofit viable commercial-scale biorefineries producing advanced biofuels. The American Recovery and Reinvestment Act dedicates funds to accelerate the construction and operation of pilot, demonstration, and commercial scale facilities. Some

European Companies are being financed by these programmes and build those plants in the US.

Who will be affected by it?

◊ Bio-based industry sectors: Biotech, chemical, energy, forest-based, sugar, starch, forestry, marine, etc.

◊ Farmers, forest-owners, waste recycling, agrofood and biomass processing industry

◊ Technology Platforms in the Biotech and Biomass sectors: Sustainable Chemistry, Biofuels, Forest-based sector, Plants for the Future, Food for life.

◊ Bioclusters e.g. CLIB 2021, Biorefinery cluster.

◊ Research performers, both in the public (universities, research organisations) and in the private sector (companies) will be directly affected as direct beneficiaries of funding;

All of the abovementioned stakeholder categories are well represented in the stakeholder group backing the JTI initiative

Through its contribution to the achievement of the Europe 2020 objectives, this initiative will have the potential to affect the lives of all European citizens.

Is EU action justified on grounds of subsidiarity? Why can Member States not achieve the objectives of the proposed action sufficiently by themselves? Can the EU achieve the objectives better?

Addressing the challenges highlighted in the previous section, goes beyond the capacity of a single company, industry sector or member state. Only true cross-border collaboration at European scale can help to overcome them by achieving the necessary economies of scale and scope and critical mass. The JTI helps to bring the scattered bio-based industries sectors under one pan-european roof and enables them to collectively build on the foundations provided by assets, strengths and skills available at national or regional level.
Many regulations with direct impact on the bio-based industries are already dealt with at EU level, e.g. CAP, bioenergy targets and standards.

In the specific case of leverage on private investment it has been seen that through EU research schemes private companies can collaborate with foreign partners at a scale not possible at national level, which induces them to invest more of their own funds than they would under national funding schemes. In addition, Community instruments play an important role in facilitating effective implementation of the Strategic Research Agenda, in particular where it is in line with related policies, notably by ensuring adequate legislation, standards and public procurement procedures.

B. Objectives of the initiative

What are the main policy objectives?

General objectives

To foster the development of a strong and globally competitive bio-based industry in Europe.
To realise its full potential as a driver of smart, sustainable and inclusive growth.
To address major societal challenges as identified under Horizon 2020 : "Food Security, sustainable agriculture, marine and maritime research and the bio-economy" and "Secure and clean energy".

Specific Objectives

- Ensure year-round supply of sustainable biomass – predominantly EU grown - for biorefinery operations. This requires research activities with regard to: improving the yield of industrial crops by at least 15% while taking into account applicable sustainability criteria, development of new industrial crops with improved functionalities, post-harvest treatments and logistical

solutions.

- Optimisation of logistics and conversion technologies leading to the use of biowaste fractions from households, industries and primary producers in EU biorefineries.

- Support the use of biomass through the development of technologies for fractionation of lignocellulosic biomass, extraction of specific biomass components (e.g. oils and proteins) and separation and purification of high-value bio-products from complex reaction mixtures.

- Develop and demonstrate conversion processes (biochemical and thermochemical) enabling the upgrading of existing industrial plants from various sectors (e.g. pulp and paper mills, biofuels, starch, chemical, etc) into integrated biorefineries (i.e. multi-feedstock, multi-product).

- Develop new biorefinery models (e.g. lignocellulosic, grasses, algae) leading to construction of a number of first-of-this-kind industrial size biorefinery plants following a prior analysis of the economic, social and environmental impacts of the value chains targeted.

Operational Objectives

- Develop and implement a common industry-driven multiannual research and innovation agenda for the next decade in a pan-European structure with the necessary critical mass and a predefined budget, ensuring continuity and allowing industry to make long terms investments plans.

- Structure stakeholders at pan-European level and along the entire value chain (ranging from biomass supply to market uptake of bio-based products) in an effective innovation-driven collaborative setting that is focussed on the development of smart, no-waste process cascades.

- Structure public sector R&I spending related to bio-based industries such that additional R&I investments by the private sector in green technologies are strongly incentivized. A steady increase in private sector R&I spending in connection with bio-based industry should thus be achieved.

- Ensure leadership of industry, SMEs and (associations of) primary producers in research and innovation projects with a view to strongly emphasize the innovation component and to enhance Europe's success in bridging the "Innovation Gap".

- Address pre-normative research needs to support policies aimed at creating strong market pull for bio-based products.

Do the objectives imply developing EU policy in new areas?

No. The development of Bio-based industries and Research and Innovation Programs in connection therewith are already part of existing policies (FP7, Lead Market Initiative Bio-Based Industries, EIP Sustainable agriculture, SET-Plan). Furthermore clear mandates for continued policy development exist under (i) Europe 2020 strategy, (ii) Horizon 2020 and (iii) the Bioeconomy Strategy.

C. Options

(1) What are the policy options (including exemptions/adapted regimes e.g. for SMEs) being considered?
(2) What legislative or 'soft law' instruments could be considered?
(3) How do the options respect the proportionality principle?

(i) What are the policy options being considered?

Option 1. (BAU) The "Business as Usual" option is based on the use of regular Horizon 2020 Instruments only.

Option 2. (PPP) This option consists of setting up a public private partnership via a contractual agreement between the parties and without the use of a dedicated Community body.

Option 3. (JTI) Option 3 relates to the creation of an institutional public private partnership or Joint Technology Initiative (JTI) on Bio-based industries established as a Community body under Article 187 TFEU.

(ii) What legislative or 'soft law' instruments could be considered?

Option 3 requires a specific Council Regulation.

(iii) How do the options respect the proportionality principle?

All options under consideration would respect the proportionality principle. The proposal for a JTI builds on current policies and actions, but seeks to achieve a greater effectiveness in addressing problems and realising objectives under the overall Horizon 2020 umbrella. The Horizon 2020 proposal clearly defines the possibility to implement new JTI's under Article 187 TFEU where justified by the scope of objectives pursued and the scale of the resources required. As described above, the development of bio-based industries as a significant pillar of a competitive and sustainable bioeconomy is a major challenge for Europe the realisation of which will have a far-reaching impact. Therefore the resource mobilisation envisaged under option 3 (from both the public and the private sector) is what is most in line with the magnitude of the challenges to be addressed.

D. Initial assessment of impacts

What are the benefits and costs of each of the policy options?

An in-depth analysis of the benefits and costs of each of the policy options is ongoing. Initial elements related to the expected impact are provided below.

Costs

As to cost, the available EU contribution for research and innovation in the relevant areas of research is assumed to be same under all three options.

Based on the resource allocation in the Horizon 2020 proposal, Option 3 envisages pooling resources from the societal challenge "Food security, sustainable agriculture, marine and maritime research and the bioeconomy" and from the challenge "Secure, clean and efficient energy", so that the EU contribution to the JTI would amount to 1 Bio €.

Benefits

In summary, Option 3 has the following main benefits over options 1 and 2:

1) An agreed stable long-term research agenda provides industries involved with the necessary certainty and perspective justifying long-term financial investment planning in the EU and potentially also a better coordination of related research and innovation efforts at EU and Member State level.

2) The partnership brings together the scattered bio-based industries sectors under one pan-european roof and enables them to collectively build on the foundations provided by know-how, strengths and skills available at national or regional level.

3) Industry is currently committed to contribute up to € 2.8 billion to the JTI "Biobased industries", indicating the very significant interest, thrust and market development opportunities. This impetus is expected to ensure the highest visibility and penetrating effects in terms of markets and market development, policies and consumer acceptance as compared to the other 2 options.

4) Costs for the implementation of the research agenda by the JTI will be shared equally between the industry and the European Commission, resulting in significantly reduced costs and administrative burden for the European Commission.

More detailed expected benefits are discussed below.

Direct leverage effects on overall project budgets and sector-specific R&I funding.

Under options 1. and 2. the general Horizon 2020 funding rules would be fully applicable. Given the proposed funding rules, eligible direct costs will be funded at 100 % (e.g. research activities), and indirect costs at 20%. Proposed reimbursement rates for activities closer to market (demonstration and flagships) are currently at 70%.

Under option 3. private stakeholders would significantly contribute to the JTI budget. Modalities of this contribution (e.g. in kind vs. in cash, relative weight of public and private contributions) as well as the possible scope of derogations to the Horizon 2020 funding rules are still under discussion. In any case, total project funds available will be significantly leveraged.

Beyond R&I resource mobilisation in the framework of the EU funded projects the impact on overall R&I funding across bio-based industry sectors (including non EU funded research) is important. Under option 3, the prospective guarantees offered to the private sector with regard to support for a strategic long term research agenda are expected to lead to an overall increase in private sector R&I spending in the bio-based industry sectors in Europe.

Innovation impacts

Participation rates of industry in general and SMEs in particular are generally viewed as important parameters for innovation impact. In FP7 FAFB projects SME's received on average appr. 12% of EU funds. Increases in the participation rates for larger industries have been very difficult to achieve.

Based on experience with existing JTI's, Option 3 will provide an opportunity to consistently achieve high industry participation rates. In addition the JTI allows targeting a good mix of SMEs and large industries.

Option 3 will therefore, in several ways, deliver a positive impact on innovation related parameters.

- Better integration of the research agenda allows concentrating resource spending in consolidated projects with critical mass and avoids waste of resources through fragmentation and duplication.

- Greater private sector involvement, commitment and leadership in the projects is expected to increase project output in terms of e.g. numbers of patents and product/process innovations.

- Concurrently, a more pertinent scale of process evaluation will be achieved, with greater emphasis on pilot and demonstration activities. This will enhance the probability of successful commercial deployment of biorefineries and reduce the timelines between research and commercial deployment.

- Strong involvement of all actors along the value chain, from primary producers over downstream users, reduces the probability of "technology mismatches" i.e. development of technologies for which a cost efficient feedstock supply cannot be ensured and development of technologies for which there is insufficient market demand.

- High quality innovation projects will more often lead to the development of fully fledged business plans for commercial scale activities. This will promote private sector investment, both corporate and venture capital type investments. It will also allow to more effectively mobilising contributions from other public sector sources such as member state funds, EU regional funds and EIB.

The impact assessment will address these parameters in more detail.

Broader socio-economic impacts

Only option 3 will provide for the stable long term research agenda that is required to secure industry commitment to deliver on long term targets as specified in the vision document of the industry. Under

both other options the research agenda would be subject to being redefined from year to year through an institutional process. The initial targets of the proposed JTI are in the process of being reviewed and assessed in more in detail, relying on input by stakeholders and independent experts. Further potential social-economic impacts will be assessed as follows:

- Compatibility with environmental goals and sustainable agriculture

- Required supply streams of biomass and revenue generation potential for primary producers

- Required scale of and investments in bio-refinery infrastructure

- Jobs associated with feeding, building and operating bio-refineries (with attention for localisation of jobs in rural, coastal and industrial areas and qualification levels required).

- Impact in terms of markets and balance of trade related with the deployment of biorefineries and sourcing of biomass in the EU.

Greater success in achieving these overarching long term socio-economic targets – associated with option 3 - will be the main driver towards substantial long-term leverage effects.

Could any or all of the options have significant impacts on (i) simplification, (ii) administrative burden and (iii) on relations with other countries, (iv) implementation arrangements? And (v) could any be difficult to transpose for certain Member States?

Compared to the management of FP research projects, management of JTI activities results in an externalisation to a Joint undertaking. This opens perspectives for a decrease of the administrative burden, provided that some of the limitations experienced with JTI's under FP7 can be overcome in the JTI structures that will be formed under Horizon 2020.

Establishing a PPP in this field would put new emphasis on bio-based industries and biomass as an important field of EU research activities and could thus increase the attractiveness of European research facilities and research intensive companies for European and non-European researchers. There are currently no difficulties foreseen in transposing the policy options considered.

(1) Will an IA be carried out for this initiative and/or possible follow-up initiatives?
(2) When will the IA work start?
(3) When will you set up the IA Steering Group and how often will it meet?
(4) What DGs will be invited?

A full Impact Assessment for the proposed JTI in the field of Bio-Based industries will be carried out.

The IA for the Bio-Based Industry JTI will run in a coordinated way with the Impact Assessments related to the extension of JTIs already existing under FP7. The creation of a common ISG with all relevant DG's has been requested (SECGEN, LEGAL SERVICE, BUDG, JRC, ENER, ESTAT, AGRI, ENTR, MARKT, SANCO, ENV, CLIMA, REGIO, COMP, EMPL). A first ISG meeting has been requested for the second half of June 2012, with another three to four meetings expected to be required over the full duration of the IA. This approach has the added benefit of allowing to take full advantage of the experience of the JTIs operating under FP7.

(1) Is any option likely to have impacts on the EU budget above € 5m?
(2) If so, will this IA serve also as an ex-ante evaluation, as required by the Financial Regulation? If not, provide information about the timing of the ex-ante evaluation.

(1) Yes

(2) Yes

E. Evidence base, planning of further work and consultation

(1) What information and data are already available? Will existing IA and evaluation work be used?

(2) What further information needs to be gathered, how will this be done (e.g. internally or by an external contractor), and by when?

(3) What is the timing for the procurement process & the contract for any external contracts that you are planning (e.g. for analytical studies, information gathering, etc.)?

(4) Is any particular communication or information activity foreseen? If so, what, and by when?

- A wide range of reports on the Bioeconomy in general and on bio-based materials and bio-fuels are available from different sources. A Group of independent experts will review the available material.
- Relevant and recent material includes (i) the IA conducted for Horizon 2020 and the specific KBBE input prepared in this context and (ii) Section B of the Commission staff working document (SWD(2012) 11 final) accompanying the Communication "Innovating for Sustainable Growth : A BioEconomy for Europe". (including a public consultation).
- The creation of a group of independent experts supporting the Impact Assessment was included in the KBBE work program (with a budget of 350.000 €). This group has been called and is currently completing its analysis. The stakeholder group backing the JTI initiative has already prepared a vision paper and is now working on a proposal with regard to the multi-annual strategic research agenda. The group is fully aware of the importance of the IA and committed to collaboration with the Commission on providing specific inputs. An initial description of information required has been provided. Any inputs from the stakeholder group will be reviewed and assessed by the Expert Group.
- A questionnaire for on-line stakeholder consultation has been drafted and submitted to the first meeting of the ISG. The online public consultation will be launched in July 2012, running for 12 weeks. It is envisaged to organise a public stakeholder event on this consultation in September 2012. A specialist expert with expertise in analysing data from on-line public consultations is part of the Expert Group.

Which stakeholders & experts have been or will be consulted, how, and at what stage?

The stakeholder group backing the JTI initiative is broad and diverse and has shown strong commitment since coming together for the first time in Febuary 2012. Several industry associations, farmer associations and a number of individual companies (from SMEs to large multinationals and from a broad range of industry sectors) are among the founder group.

A conference on "What bioeconomy offers European regions" is planned with the Committee of Regions on 11 or 12 October 2012; a second conference foreseen for 20 or 21 November with the Committee for the Regions will deal with 'New skills For a European Bioeconomy'. A dinner debate on 'how to realise the potential of the bioeconomy' will be hosted by MEP Jo Leinen on 11 September. A briefing to EP on' the biobased economy: sustainable use of agricultural residues' will take place on 2 October 2012.

As for the further stakeholder consultation, in particular the on-line public consultation, all associations that are represented in the JTI stakeholder group will be solicited to reach out to their members. In addition, attention will be drawn to the on-line public consultation at various conferences and events in which Commission staff will participate. In order to ensure diverse inputs, specific attention will be paid to contacting a wide range of research institutes and universities as well as NGO's.

Within the group of independent experts providing inputs to the impact assessment, a mix of experience from the private sector (industry, SMEs, venture capital), academia and research institutes, NGO's and public administration will be represented. Different sectoral backgrounds are represented (agriculture, biofuels, bioindustry).