





BIOECONOMY IN THE HORIZON 2020 Blue Growth

Santander, 25 de Marzo de 2015



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BIOECONOMY in the H2020 Legislation and political context



At European level

- ➤ Europe 2020. A strategy for smart, sustainable & inclusive growth. (3.3.2010) COM(2010) 2020 Final.
- ➤ Innovating for Sustainable Growth: A Bioeconomy for Europe. (13.02.2012) COM (2012)60 Final.
- ➤ H2020- Regulation (EU) Nº1291/2013 of de European Parliament and of the Council.
- ➤ Specific Programme H2020. Council Decision(2013/743/UE). (03.12.2013)

At national level

- ➤ Spanish strategy for science, technology and innovation (2013-2020)
- ➤ Spanish national plan for scientific & technological research and innovation (2013-2016)





BIOECONOMY in the H2020 **Legislation and political context**



Support to Policies is essential - links between research projects and EU policies

- •DG Health and Consumers (DG SANCO): plant health protection, animal health and welfare, food security and food safety, sustainability, obesity, ...
- •DG Agriculture and Rural Dev. (DG AGRI): organic farming, quality products.
- •DG Environment (DG ENV): soil protection, water, waste management, genetic resources (agriculture, forest and microbial)
- •DG Maritime Affairs and Fisheries (DG MARE): Common Fisheries Policy (FCP), EU Integrated Maritime Policy, Blue Growth Strategy, Maritime Spatial Planning Directive, cooperation with international partners.
- •DG Enterprise and Industries (DG ENTR): eco-innovation in the food industry, particularly SMEs, development of industrially relevant technologies







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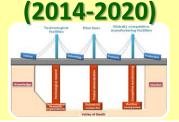




H2020 – Framework Programme for Research & Innovation









Excellent Science

Industrial Leadership

Societal Challenges

European Research Council (ERC)

Future and Emerging Technologies (FET)

Marie Skłodowska-Curie actions on skills, training and career development

European research infrastructures

ICT

Nanotechnology

Biotechnology

Advanced Materials

Advanced Manufacturing & Processing

Space

Access to Risk Finance

Innovation in SMEs

Health, demographic change and wellbeing

Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the Bioeconomy;

Secure, clean and efficient energy;

Smart, green and integrated transport;

Climate action, environment, resource efficiency and raw materials

Europe in a changing world-Inclusive, innovative and reflexive societies

Secure Societies: Protecting freedom and security of Europe and its citizens







H2020 – Framework Programme for Research & Innovation



1.903

2.374

BUDGET

Excellent Science

Industrial Technologies

Societal Challenges



	H	ORIZONTE 2020	79.402	
ì	1.	Prioridad «Ciencia excelente»	24.441	
- 1		1. El Consejo Europeo de Investigación (CEI)	13.095	
		2. Las Tecnologías Futuras y Emergentes (FET)	2.696	
		3. Las acciones Marie Skłodowska-Curie	6.162	
1		4. Las infraestructuras de investigación	2.488	
•	Ш	Prioridad «Liderazgo industrial»	17.016	
		1. Liderazgo en tecnologías industriales y de capacitación:	13.557	
П		1.1 Tecnologías de la información y la comunicación (TIC)		
ш		1.2 Nanotecnologías, 1.3 Materiales avanzados y 1.5 Fabricación y transformación avanzad	as	
		1.4 Biotecnología		
ш		1.6 Espacio	1.536	
		2. Acceso a la financiación de riesgo	2.842	
١,		3. Innovación en las PYME	616	
		Detailed a Batter and a land	00.070	
- (111	Prioridad «Retos sociales» 1. Salud, cambio demográfico y bienestar	29.679	
- 1	Г	2. Seguridad alimentaria, agricultura sostenible, investigación marina y marítima y bioeconomía		
П	ŀ	3. Energía segura, limpia y eficiente	5.931	
П			6.339	
П		4. Transporte inteligente, ecológico e integrado		
П		5. Acción por el clima, eficiencia de los recursos y materias primas	3.081	
١,	L	6. Sociedades inclusivas	1.309	
	-	7. Sociedades seguras	1.695	
J	Cie	encia con y para la sociedad	462	
en M€	Ampliando la participación			
ntes	Ins	tituto Europeo de Innovación y Tecnología (EIT)	2.711	

Acciones directas no nucleares del Centro Común de Investigación (JRC)



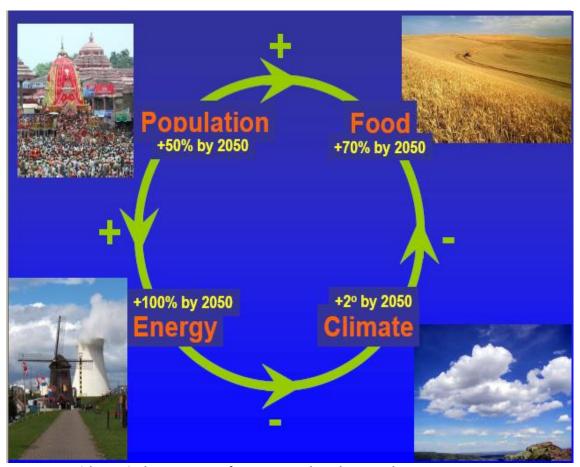


EURATOM (2014-2018)

SC2 - BIOECONOMY – Grand Challenge



Addressing "GRAND CHALLENGES".



Fuente: Patrick Cunningham, KBBE Conference Brussels 14th September 2010 José María Sumpsi, "Los retos de la agricultura para alimentar al mundo en 2050".







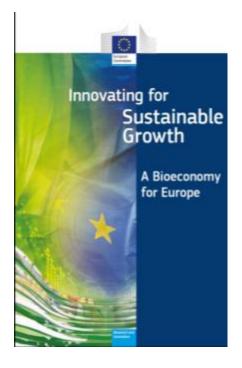


The Bioeconomy starts here!

http://www.youtube.com/watch?v=2xvXkOMRTs4



Brussels, 13.2.2012 COM(2012) 60 final













Info on how to participate in H2020!!



APPLICANTS





Delegate & Experts



Spanish Inputs

National Policy, CCAA

TP, Univ, RTOs, L.E., SMEs

SC2 Bioeconomy + LEIT (Biotechnology)

- Marta Conde (CDTI) NCP
- Andrés Montero (INIA) NCP

SC2 Bioeconomy

- José Manuel González (CDTI) Delegate
- Luis Miguel Ortega (UCM) Expert
- Mónica de Prado (ELIKA) Expert CCAA

LEIT (Biotechnology)

- Lucía Iñigo (CDTI) Delegate
- Carles Cane (CNM) Expert







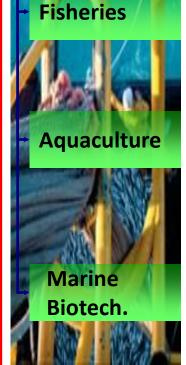
BIOECONOMY in the H2020 SC2 - BIOECONOMY - Structure and Contents





Production systems **Ecosystem** services **Policies and Rural Devel. Forestry**

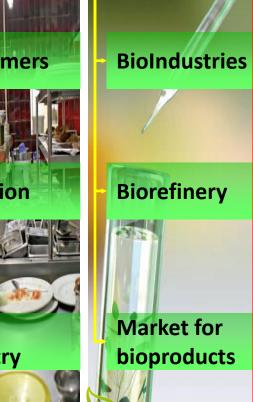
Marine Resources



Food



BioIndustries



BIO-BASED INDUSTRIES

Marine & maritime



Cross-cutting technologies

Oceans of





SC2 - BIOECONOMY - Structure and Contents



<u>Developing sustainable and environmentally-friendly fisheries</u>

- In depth understanding of marine ecosystems (new insights, tools and models to improve understanding of what makes marine ecosystems healthy and productive)
- Evaluate & mitigate the impact of fisheries on marine ecosyst. (including deep sea).
- The socio-economic effects of management options will be measured.
- Effects and adaptation to environmental changes, including climate change.
- Research on the biology, genetics and dynamics of fish populations, on the role of key species in the ecosystems, on fishing activities
- Shared use of maritime space with other activities, in particular in the coastal zone, and its socio-economic impact will also be addressed.
- Research on fishing sector behaviours & adaptation to new markets (eco-labelling).

Developing competitive European aquaculture

- Development of healthy, safe and competitive products.
- Domestication of established species and diversification for new species.
- Interactions between aquaculture and aquatic ecosystems, effects of climate change
- Sustainable production systems in inland, on the coastal zone and offshore.
- Understanding the social and economic dimensions of the sector to underpin cost and energy efficient production.
- Research on health/diseases, nutrition issues, reproduction & breeding of farmed aquatic organisms.

Boosting marine innovation through biotechnology

- Discovery of new species and applications in the field of marine biotechnologies, which is foreseen to generate a 10 % annual growth for this sector.
- Explore and exploit marine biodiversity and aquatic biomass to bring new innovative processes, products and services on the markets with potential applications in sectors including chemical and material industries, pharmaceutical, fisheries and aquaculture, energy supply and cosmetic.







BIOECONOMY in the H2020 SC2 - BIOECONOMY - Structure and Contents



Climate change impact on marine ecosystems and maritime economy

- Understand the functioning of marine ecosystems, the interactions between oceans and the atmosphere.
- Increase the ability to assess the role of the oceans on climate and the impact of climate change and ocean acidification on marine ecosystems and coastal areas.

Develop the potential of marine resources through an integrated approach

- Boosting long-term, sustainable maritime growth and create synergies across all the maritime sectors requires an integrated approach.
- Research activities will focus on preserving the marine environment as well as the impact of maritime activities and products on non-maritime sectors.
- Advances in the field of eco-innovation (new products, processes and the application of management concepts, tools and measures) to assess and mitigate the impact of human pressures on the marine environment.
- Towards a sustainable management of maritime activities.

Cross-cutting concepts and technologies enabling maritime growth

- Cross-cutting enabling technologies (e.g. ICT, electronics, nanomaterials, alloys, biotechnologies, etc.) and new developments and concepts in engineering.
- Marine & maritime research & ocean observation (deep-sea research, observing systems, sensors, automated systems for monitoring of activities and surveillance, screening marine biodiversity, marine geohazards, Remotely Operated Vehicles...)
- Reduce the impact on the marine environment (underwater noise, invasive species and pollutants) and minimise the carbon foot-print of human activities.
- Support the implementation of marine and maritime Union policies.







Cross-cutting technologies

Oceans of

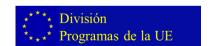






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BIOECONOMY in the H2020 SC2 - BIOECONOMY - Blue Growth





SC2 - BIOECONOMY - Blue Growth - Oceans for the future

A huge potential for EU growth, market and jobs

- 5,4 million jobs in the EU; potential 7 million by 2020
- Gross added value € 500 billion per year
- Sectors having high potential for growth (Blue Growth agenda)
 - Aquaculture (2/3 fish production by 2030, 6,6%growth rate)
 - Marine biotechnology (yearly growth 5 to 10%)
 - Deep sea mining (global anual turnover € 5 billion/next 10 years)
 - Ocean energy (offshore wind employed 35.000 people in 2011)
 - Tourism (2,35 million employed)

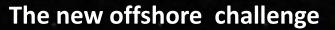
<u>Blue Growth – Opportunities for marine and maritime sustainable growth</u>
<u>(COM (2012) 494 final)</u>

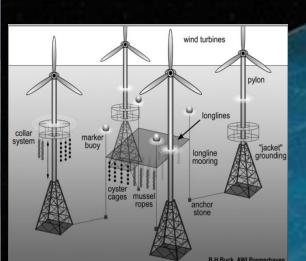




BIOECONOMY in the H2020 SC2 - BIOECONOMY - Blue Growth









AQUACULTURE - Huge potential for technological and biotechnological innovation

Key Disciplines: Monitoring and Deep Sea Research







Marine Biomass and Biotechnolgy

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BIOECONOMY in the H2020 WORK PROGRAMME. TIMELINE



2014	2015	2016	2017	2018	2019	2020
Strate	egic Progra	mme				
Work Prog	gramme 1	Strate	egic Progra	mme		
		WP 2 (+ 2	018 info?)	Strate	egic Progra	mme
				WP 3 (+ 2	020 info?)	WP 4





FOCUS Areas 2014-2015	Health 1	Food 2	Energy 3	Trans 4	Climate 5	Innov. Societ. 6	Secure Societ. 7
Personalising health & care	•	•					
Sustainable food security		•					
Blue growth		•	•	•	•		
Smart cities & communities			•	•			
Competitive low- carbon energy			•				
Energy Efficiency			•				
Mobility for growth				•			
Waste (+NMBP)		•			•		
Water		•			•		
Overcoming the crisis						•	
Disaster- resilience					•	•	
Digital security							

Centro para el Desarrollo Tecnológico Industrial

BIOECONOMY in the H2020 WORK PROGRAMME 2014-2015. MAIN FEATURES



- Biennial WP for 2014 and 2015 (482 M€)
 - 2014: 292.5 M€ (238 M€ RIA+IA, 35.5 M€ CSA, 14 M€ SME, 5 M€ ERANET)
 - 2015: 189.5 M€ (138 M€ RIA+IA, 14.5 M€ CSA, 22 M€ SME, 15 M€ ERANET)
- Three calls addressing some Focus Areas:
 - Sustainable Food Security (2014: 18 topics, 147M€; 2015: 12 topics, 104.5 M€)
 - Blue Growth (Seas and Oceans) (2014: 12 topics, 101M€; 2015: 5 topics 43 M€)
 - Innovat. Sust. Inclusive Bioec. (2014: 11 topics, 44,5M€; 2015: 8 topics, 42 M€)
- Topics are framed in the context of overall H2020 approach:
 more general, less prescriptive, larger scope, fewer topics; strong emphasis on
 expected impact; possible funding +1ppt; strong challenge-based approach,
 allowing applicants to have considerable freedom to come up with innovative
 solutions
- Type of actions: RIA; IA; CSA; SMEs inst.; prizes & FTI
- Two stages evaluation procedure (RIA & IA)





BIOECONOMY in the H2020 WORK PROGRAMME 2014-2015. CALLS



2014 calls Info to applicants: 19 /26 Nov 2014

Grants: by end Feb 2015

2015 calls: *Meeting with NCP and Scientific Officer! (tbd)*

21 Nov. 2014: Info Day (Brussels)

Calls (Focus areas/other)	2015	Opening date	1st stage Closing date	2nd stage Closing date	Topics	Budget (M€)
Sustainable Food Security (SFS)	H2020-SFS-2015-1				12	104,5
Blue Growth (BG)	H2020-BG-2015-1 H2020-BG-2015-2	25/07/2014	03/02/2015	11/06/2015	5	43
Innovative Sustainable and Inclusive Bioeconomy (ISIB)	H2020-ISIB-2015-1 H2020-ISIB-2015-2				5	27







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BIOECONOMY in the H2020 STRATEGIC PROGRAMMING 2016 - 2017





WP 2016-2017 CDTI Consultation: launched on 3rd July 2014

Timeline (WP 2016-2017 Preparations)

2014	By the summer break	External consultation, including: - Advisory Groups; - other stakeholders and wider R&I community; - Strategic configuration of the PC (on process, criteria) - Commission services to analyse input on basis of selection criteria and prepare first drafts			
	After the summer break	Discussion with PC configurations on the basis of drafted documents			
	22 October 26 November	Programme Committee meetings			
	December	Proposed 2nd Strategic Programme			
2015	First half of the year	Preparation of the WP 2016/17, prepared on the basis of the finalised Strategic Programme			
	In the course of Summer 2015 or later	Adoption of the Work Programme; Publication of the calls for 2016/17			

☐ PCM on 18th March and 28th April







WP 2016-2017. From Scoping Paper to WP 2016-2017

Sustainable Food Security (Focus Area & Call)

- •Resilient and resource efficient value chains.
- Environment & climate smart primary production.
- Competitive food industry
- Healthy and safe foods and diets

Blue Growth (Focus Area & Call)

- •Innovation for emerging Blue Growth activities.
- •Healthy oceans and seas for healthy people.
- •European ocean observation, surveying and monitoring capability

Rural Renaissance (Call)

- •Interlinked rural areas delivering goods and services.
- Modern tools in the service of rural communities (ICT)
- Innovation and skills development.

Bioeconomy (Call)

- Securing sustainable biomass supply for bio-based goods and services.
- •Building "bio-based markets of the future" -mobilising stakeholders.







WP 2016-2017. From Scoping Paper to WP 2016-2017

Blue Growth (Focus Area & Call)

•Innovation for emerging Blue Growth activities.
☐ Multi-use offshore floating platforms, combining energy production,
aquaculture, fisheries, vessel design, and related technologies (sensors,)
☐ Marine biomass integrated bio-refineries (algae) - added value products.
■ Exploitation of deep sea mineral
•Healthy oceans and seas for healthy people.
☐ Interaction between humans and oceans. Healthcare and wellbeing
☐ Innovation for clean coasts and seas
Improving the safety and dietary properties of fish and seafood.
•Strengthening the European ocean observing, surveying and monitoring capabilit
☐ Integrated observing Systems in the Artic. Climate change and global
warming, development of prediction tools for weather an climate in
Northern latitudes.
Observing Systems in the Mediterranean (improve security and safety of
people and goods at sea.
•Horizontal activities in BG.
☐ Blue Med Initiative, Support to SMEs.

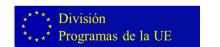






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BIOECONOMY in the H2020 ADDITIONAL EUROPEAN R&D INITIATIVES.- ERANETS



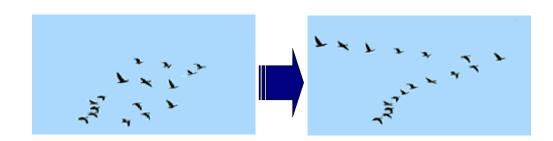
ERANET & ERANET+ & ERANET Cofund

The EU through the **ERA-NET** scheme creates European **networks** that facilitate the **coordination of national and regional R&D** programs. The objective is to **reduce fragmentation**, maximize cooperation and address the technological challenges of the future.

From 2002 until 2013, 359 calls have been launched with the participation of **72 countries**, a total of **3.400 research pro**jects have been financed and and mobilizing **400 million € mobilized**.

Source: CDTI Perspective Magazine Nº45

Birds show us the way: 71 % gain of efficiency







BIOECONOMY in the BIOMERSA. An ERA-NET IN BIODMERS IT, Research CORE ORGANIC. Coordination of European Trans **ADDITIONAL EUROPEA**

ACENET: Coordination and Cooperation in the Field of Applied Catalysis

ation of European Transnational Research in Organic Food and Farming

ERA-ARD. The Agricultural Research for Development (ARD) Dimension of the European Research Area

ERA-PG. ERA-NET Plant Genomics

ERASYSBIO, ERA-NET for Systems Blology

EUPHRESCO I. Coordination of European Phytosanitary (Statutory Plant Health) Research

EUROTRANS-BIO, EUROpean Network of TRANSnational Collaborative RTD for SMEs Project in the Field of Biotechnolog

MariFish. The Coordination of European Marine Fisheries Research Programmes

PLATE R SAFEFOODERA. European Excellence in Food Safety Research Programming SNOWMAN. Sustainable Management of Soil and Groundwater

SNOWMAN. Sustainable Management of Soll and Groundwater

WOODWISDOM-NET. Networking and integration of National Programmes in the Area of Wood Material Science and Engineering



ANIHWA, Animal Health and Welfare

ARIMNET. Coordination of Agricultural Research in the Mediterranean

ARIMNet2, Coordination of Agricultural Research in the Mediterranean

BIODIVERSA2. Cooperation and Shared Strategies for Biodiversity Research Programmes in Europe

CAPITA: Catalytic Processes for innovative Technology Applications

C-IPM. Integrated Pest Management (IPM) ERA-NET

CIRCLE-2. Climate impact Research and Response Coordination for a Larger Europe

COFASP, Strengthening Cooperation in European Research on Sustainable Exploitation of Marine Resources in the Seafood Chains - ERANE

CORE ORGANIC II. Coordination of European Transnational Research in Organic Food and Farming Systems

EMIDA. Coordination of European Research on Emerging and Major Infectious Diseases of Livestock

ERA-ARD II. The Agricultural Research for Development Dimension of the European Research Area

ERA-CAPS, ERA-NET for Coordinating Action in Plant Sciences

ERA-IB-2, ERA-NET for Industrial Biotechnology 2

ERA-MBT. MARINEBIOTECH Towards Integrated European Marine Research Strategy and Programme

ERASYNBIO. Development and Coordination of Synthetic Biology in the European Research Area

ERAS/sAPP. Systems Biology Applications

ETB-PRO. EURpean Programme for TRANSnational R&D&I Cooperations of BiOtech SMEs

EUPHRESCO II. EUROPEAN PHYTOSANITARY RESEARCH COORDINATION II

FORESTERRA. Enhancing Forest RESearch in the MediTERRAnean through improved coordination and integration

ICT-AGRI 2. Information and Communication Technologies and Robotics for Sustainable Agriculture ERA-NET

PreSto GMO ERA-NET: Preparatory steps towards a GMO research ERA-NET

RURAGRI, Facing Sustainability: New Relationships Between Rural Areas and Agriculture in Europe

SEAS-ERA. Towards Integrated European Marine Research Strategy and Programmes

SUMFOREST. Tackling the Challenges in the implementation of Sustainable and Multifunctional Forestry through Enhanced Research Coordination for Poli-

www.era -platform.eu SUSFOOD, Sustainable Food Production and Consumption

NET-2. Networking and integration of National Programmes in the Area of Wood Material Science and Engineering in the Forest-Based Value

BESTF 1. BloEnergy Sustaining the Future

BESTF 2. BloEnergy Sustaining the Future 2

CORE Organic Plus. Coordination of European Transnational Research in Organic Food and Farming Systems Plus

ERA Sysbio+. The consolidation of systems biology research stimulating the wildespread adoption of systems approaches in biomedicine, biotechnology, and agri-food. para el

FACCE-ERA-NET+: Food Security, Agriculture, Climate Change ERA-NET Plus

WOODWISDOM-NET+ Pacing Innovation in the Forest-Based Sector, Innovation in the forest-based sector for increasing resource efficiency and tackling climate change with competitive customer solutions





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ed Bio-Economy

The same of

ADDITIONAL EUROPEAN R&D INITIATIVES.- JPIs

What are Joint Programming Initiatives - JPIs?

Introduced by the EC in **2008** to **implement the ERA**.

The objective is to "increase the value of relevant national and EU R&D funding by concerted and joint planning, implementation and evaluation of national research programmes".

In JPI Member States are expected to **coordinate** national research activities, **develop common research agendas**, in order to face **grand societal challenges**. JPIs intends to tackle the challenges that cannot be solved on the national level.



Agriculture Food Security and Climate Change









BIOECONOMY in the H2020 ADDITIONAL EUROPEAN R&D INITIATIVES.- JPIs (OCEANS)



JPI - HEALTHY PRODUCTIVE SEAS AND OCEANS

http://www.jpi-oceans.eu/

https://vimeo.com/87770231

Coordinated approach in marine and maritime research. **Seas and Oceans** provide an essential part of our wealth and well-being.

Global population requires food sources.

Underexplored marine biodiversity and marine renewable energy.

Transport modalities and tourism.

Human activities & climate change.

Coastal waters & areas

Deterioration of the marine env.



CLIMATE

CHANGE





CLIMATE CHANGE IMPACT ON

OCEANS

ENVIRONMENT



BIOECONOMY in the H2020 CDTI's support. What, How, When









BIOECONOMY in the H2020 HORIZON 2020.- Documents of interest



Participant Portal:

http://ec.europa.eu/research/participants/portal/desktop/en/home.html

Portal español del H2020:

http://www.eshorizonte2020.es/

Guía del participante (Español):

http://eshorizonte2020.cdti.es/index.asp?TR=C&IDR=2224

Listas de distribución del portal español de H2020:

http://www.eshorizonte2020.es/suscripcion

Work Programme "Bioeconomy":

http://ec.europa.eu/research/participants/data/ref/h2020/wp/2014 2015/main/h2020-wp1415-food en.pdf

Innovating for Sustainible Growth. A Bioeconomy for Europe:

http://ec.europa.eu/research/bioeconomy/pdf/bioeconomycommunicationstrategy b5 brochure web.pdf

Information Package: IP in H2020:

http://www.iprhelpdesk.eu/node/2519

Standard briefing evaluators:

http://www.h2020.es/2014/03/interesante-presentacion-sobre-el.html?m=0

Ayudas a la Preparación de Propuestas Comunitarias (APC):

http://www.cdti.es/index.asp?MP=7&MS=572&MN=3&TR=C&IDR=600







Thanks for your attention!

Any questions?

Marta Conde

National Contact Point for SC2 Bioecnonomy & LEIT "Biotech"

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