



# **Management Plan 2016**

JOINT RESEARCH CENTRE

- public version -

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## Introductory note

*"With the goal of delivering in 2016 a simplified and more focused performance framework, the Strategic Plan (SP) and the Management Plan (MP) replace the former Management Plans and represent new cornerstones for the Commission's performance framework embedded into the overall Strategic Planning and Programming cycle (SPP cycle). " (Instructions for the Strategic Plan 2016-2020 and Management Plan 2016)*

- *The Strategic Plan (SP), giving a multi-annual perspective, focuses on the longer term objectives and outputs covering the upcoming 5 years (2016-2020). This document presents the Commission wide General Objectives (CGO), reflecting the Juncker priorities. DGs have to identify which CGO they contribute to and describe in the SP, how they want to contribute to the achievement of the relevant CGO over the given time horizon.*
- *The Management Plan (MP), giving an annual perspective, focuses on the resources, activities and outputs planned for the coming year (2016).*

*The JRC Strategic Plan presents the selected Commission general objectives and the JRC multi-annual specific objectives and associated impact and result indicators.*

*The JRC Management Plan defines the activities planned for the coming year in relation to these multi-annual objectives, as well as the corresponding outputs and output indicators.*

## PART 1. Overview of main outputs for the year

The tables below present the key orientations (KOs) of the JRC Work Programme (WP) for 2016-2017. The detailed JRC Work Programme lists several dozens of planned deliverables corresponding to the key orientations presented hereafter for each of the specific objectives related to the general objectives (GOs) 1, 3, 4 and 9.

Moreover, and as explained in the JRC Strategic Plan 2016-2020, the JRC provides a) policy support to the other GOs as well, and b) it provides also support cutting across all GOs. These key orientations are presented in Annex 7.

The complete list of planned deliverables corresponding to the key orientations, with all details, can be found in the JRC Project Browser (JPB) at the following link: <http://apps.jrc.cec.eu.int/jpbma>

The target values for policy related outputs presented below by general objective / specific objective are based on the number of planned policy deliverables from the Multi-annual Work programme of the JRC currently available in JPB.

Relevant general objective 1: A New Boost for Jobs, Growth and Investment		
<b>Specific objectives 1.1 to 1.9 (contributing to H2020 Specific Objective 17):</b> A well-informed European policy-making, appropriately and timely supported by the JRC through the provision of high quality and innovative scientific and technical studies, tools, data, materials, models and standards, in the following areas:		Related to spending programme: H2020
(Specific objective 1.1)	Agriculture and Rural Development	
(Specific objective 1.2)	Education, Culture, Youth and Sport	
(Specific objective 1.3)	Environment	
(Specific objective 1.4)	Maritime Affairs and Fisheries	
(Specific objective 1.5)	Health and Food Safety	
(Specific objective 1.6)	Regional Policy	
(Specific objective 1.7)	Research, Science and Innovation	
(Specific objective 1.8)	Transport	
(Specific objective 1.9)	Employment, social affairs, skills and labour mobility	
Main outputs in 2016:		
Policy-related outputs /expenditure outputs <sup>1</sup>		
Description	Indicator	Target date
<b>JRC Key Orientations in the area of "Agriculture and Rural Development":</b> 1.1.a Common Agricultural Policy (CAP) implementation – efficient and innovative tools for CAP implementation. 1.1.b CAP design, monitoring and evaluation 1.1.c Resource efficiency and climate change – model soil, water and ecosystem dynamics 1.1.d Agricultural market, trade & food security – economic analysis of the competitiveness of the European agri-food sector, the performance of European agri-food systems.	Policy related outputs	Throughout 2016  Target value: 41
<b>JRC Key Orientations in the area of "Education, Culture, Youth and Sport":</b>	Policy related outputs	Throughout 2016

<sup>1</sup> For the JRC, the distinction policy-related outputs and expenditure outputs is not relevant as all policy-related outputs are expenditure outputs, given that the JRC activities are funded by a spending programme.

<p>1.2.a Help monitor trends in education and training systems under EU policy strategies</p> <p>1.2.b Contribute to the successful implementation of the ET2020 strategic framework for European cooperation in education and training</p> <p>1.2.c Develop evaluation tools to measure and monitor cultural activities and creativity</p>		<p>Target value: 19</p>
<p><b>JRC Key Orientations in the area of "Environment":</b></p> <p>1.3.1 Protecting and enhancing our natural capital</p> <p>1.3.1.a Freshwaters and the marine environment. Assessment of water resources and water use efficiency, floods and droughts, the monitoring of water chemical, biological and ecological quality, and nutrient cycles, and hydro-economic modelling for the Water Framework Directive and related directives.</p> <p>1.3.1.b Biodiversity, forests and soils. Support the implementation of the EU Biodiversity Strategy</p> <p>1.3.2 A circular, green and competitive low carbon economy</p> <p>1.3.2.a Sustainable consumption and production and the circular economy. Develop methodologies and life-cycle data for sustainable consumption and production policies.</p> <p>1.3.2.b Environmental information and indicators. Develop environmental indicators in support of the roadmap to a resource-efficient Europe</p> <p>1.3.2.c Policy impacts on sustainability and competitiveness. Carry out integrated sustainability assessments and impact assessments of EU policies</p> <p>1.3.3 Protection from environment-related risks to human health and wellbeing</p> <p>1.3.3.a Chemicals and nanomaterials. Implement the chemicals legislation and support policy development in cross-cutting areas.</p> <p>1.3.3.b Air quality, pollutant emissions and industrial accident prevention. Monitor and model ambient air quality and air emissions</p>	<p>Policy related outputs</p>	<p>Throughout 2016</p> <p>Target value: 207</p>
<p><b>JRC Key Orientations in the area of "Maritime Affairs and Fisheries":</b></p> <p>1.4.a develop and apply biological, economic, social, spatial and genetic/genomic approaches to sustainable and competitive aquaculture and fisheries, in the EU and worldwide;</p> <p>1.4.b develop marine knowledge for maritime spatial planning and coastal management</p> <p>1.4.c improve EU maritime surveillance systems</p>	<p>Policy related outputs</p>	<p>Throughout 2016</p> <p>Target value: 36</p>
<p><b>JRC Key Orientations in the area of "Health and Food Safety":</b></p> <p>1.5.1 Health</p> <p>1.5.1.a Contribution to the standardisation and</p>	<p>Policy related outputs</p>	<p>Throughout 2016</p> <p>Target value: 99</p>

<p>improvement of health research, information, monitoring and measurements in support of evidence-based policy making.</p> <p>1.5.1.b development of European health registry data and a Bioinformatics Platform for human 'omics' data;</p> <p>1.5.1.c promotion of a healthier society, including actions in the field of physical activity, nutrition (diet, alcohol) science and health technologies.</p> <p>1.5.2 Food safety</p> <p>1.5.2.a run the six EU reference laboratories, produce certified reference materials, develop harmonised/validated methods and new analytical tools;</p> <p>1.5.2.b collect data and carry out analysis in support of evidence-based policy making and develop exposure assessment methods; fight against food fraud and provide support for impact assessments.</p>		
<p><b>JRC Key Orientations in the area of "Regional Policy":</b></p> <p>1.6.a Territorial impact assessment of policies and investments. Developing an integrated modelling capacity that would make it possible to better assess the impact of investment and policies in regions and cities.</p> <p>1.6.b Indices and quantitative analysis measuring economic, social and territorial cohesion at urban and regional level.</p> <p>1.6.c Support for smart specialisation strategies. Integrated processes and methods to support the development, implementation and monitoring of smart specialisation strategies at national, regional and macro-regional level.</p>	Policy related outputs	Throughout 2016  Target value: 35
<p><b>JRC Key Orientations in the area of "Research, Science and Innovation":</b></p> <p>1.7.a Modelling, monitoring and analysis of the drivers of and socioeconomic barriers to research and innovation.</p> <p>1.7.b Programme and project level support for fuel cells and hydrogen technologies under the Fuel Cells and Hydrogen 2 Joint Undertaking</p> <p>1.7.c Development of a low carbon energy observatory</p> <p>1.7.d Data collection, analysis, dissemination and modelling on the progress of the bioeconomy, through the Bioeconomy Observatory</p> <p>1.7.e Promotion of collaboration on intellectual property rights and technology.</p>	Policy related outputs	Throughout 2016  Target value: 75
<p><b>JRC Key Orientations in the area of "Transport":</b></p> <p>1.8.a transport innovation – support the strategic transport innovation agenda and develop the transport innovation and monitoring information</p>	Policy related outputs	Throughout 2016  Target value: 40

<p>system;</p> <p>1.8.b alternative fuels – carry out pre-normative testing and contribute to development of standards supporting the implementation of the alternative fuels infrastructure in the frame of an Alternative Fuels Knowledge Centre; modelling of and support for electro-mobility standardisation;</p> <p>1.8.c transport policy analysis – socioeconomic analysis of the transport sector, using transport models, quantitative methodologies, data, scenarios, and technology watching; harmonise transport data with spatial and environmental information;</p> <p>1.8.d intelligent transport systems and electronic tools – technical support for the implementation of the ‘digital tachograph’.</p> <p>1.8.e safety and security – development of tools and databases on EU-wide multimodal accidents and incidents, as well as data visualisation and exploration tools for transport safety analysis</p>		
<p><b>JRC Key Orientations in the area of "Employment, social affairs, skills and labour mobility":</b></p> <p>1.9.a Provide technical advice, methodological support, specialised training and exchange on counterfactual impact evaluations</p> <p>1.9.b Provide robust knowledge on both the distribution and evolution of skills and their links with employability, and on the impact of digitalisation on labour markets.</p> <p>1.9.c Provide assessment studies, technical and scientific support in the area of protection of workers' health from possible risks arising from exposure to hazardous chemicals at the workplace, e.g. carcinogens.</p>	Policy related outputs	<p>Throughout 2016</p> <p>Target value: 17</p>

<p><b>Relevant general objective 3: A Resilient Energy Union with a Forward-Looking Climate Change Policy</b></p>	
<p><b>Specific objectives 3.1 to 3.3 (contributing to H2020 Specific Objective 17 and to EURATOM Research &amp; Training Programme Specific Objectives 9, 10, 11, 12 and 13):</b></p> <p><b>A well-informed European policy-making, appropriately and timely supported by the JRC through the provision of high quality and innovative scientific and technical studies, tools, data, materials, models and standards, in the following areas:</b></p> <p><b>(Specific objective 3.1) Climate Action</b></p> <p><b>(Specific objective 3.2) Energy</b></p> <p><b>(Specific objective 3.3) Safe, secure and sustainable use of the nuclear energy</b></p>	<p>Related to spending programmes: H2020 and Euratom</p>
<p><b>Main outputs in 2016:</b></p>	

Policy-related outputs / expenditure outputs <sup>1</sup>		
Description	Indicator	Target date
<p><b>JRC Key Orientations in the area of "Climate Action":</b></p> <p>3.1.1 Climate policy development and implementation</p> <p>3.1.1.a Delivering greenhouse gas emissions reductions – monitoring, reporting and verification of energy-related, product-related, agricultural and forestry emissions to meet legal obligations at EU and UNFCCC4/international level;</p> <p>3.1.1.b Economic and climate modelling/assessments in support of (long-term) low carbon and climate-resilient sustainable development (mitigation and adaptation policy) – assess climate change impacts, vulnerability, adaptation and mitigation policy options in the EU and globally</p> <p>3.1.1.c Earth system’s science – advance understanding of how the climate system interacts with other parts of the Earth’s system (e.g. ice and forests) and translate the findings into policy guidelines.</p> <p>3.1.2 Low carbon technologies</p> <p>3.1.2.a Vehicle emissions – technical support for implementing and developing policy measures addressing short and long-term objectives for the decarbonisation of the transport sector</p> <p>3.1.2.b Alternative fuels for transport – assess the environmental sustainability, technological development and costs of bioenergy and biofuels and of associated greenhouse gas emissions savings.</p> <p>3.1.2.c NEW ENTRANTS RESERVE (NER 300) – technical support for the knowledge sharing facility of the NER 300 funding programme.</p>	Policy related outputs	<p>Throughout 2016</p> <p>Target value: 38</p>
<p><b>JRC Key Orientations in the area of "Energy":</b></p> <p>3.2.a Energy-climate-economy modelling – develop, validate, and run models for climate-energy-economy modelling; provide support for impact assessments and particular scenarios; develop the capacity to contribute to the design of the energy-climate reference scenario.</p> <p>3.2.b Energy security – carry out security, safety, risk and techno-economic assessments of the EU’s energy supply from conventional and unconventional resources (oil, natural gas).</p> <p>3.2.c Internal energy market: assess the development of energy infrastructure and energy markets in the EU</p> <p>3.2.d Energy efficiency – analyse the development and deployment of energy efficiency technologies; support the implementation of the Energy Efficiency Directive’s provisions on efficient heating, cooling and electricity; support the Covenant of Mayors on energy</p>	Policy related outputs	<p>Throughout 2016</p> <p>Target value: 125</p>

<p>efficiency; analyse smart power grids</p> <p>3.2.e Low carbon energy technologies – carry out techno-economic assessments of renewable energy technologies; support the implementation of the carbon capture and storage directive and analyse the potential for re-use of CO<sub>2</sub>; carry out energy modelling and analysis of energy demand, supply and consumption scenarios at national, regional and pan-European level.</p> <p>3.2.f Research &amp; innovation – Support the implementation of the integrated SET Plan through a strengthened information system (SETIS). Develop indicators that monitor the progress of energy technology innovation as an input to the annual State of the Energy Union report. Carry out relevant techno-economic analysis and energy systems modelling.</p>		
<p><b>JRC Key Orientations in the area of "3.3 Safe, secure and sustainable use of the nuclear energy":</b></p> <p>3.3.1 Safety of nuclear reactors and nuclear fuels</p> <p>3.3.1.a Collection, analysis, and assessment of nuclear power plants' operational experience worldwide, and dissemination of information to the Member States' regulatory authorities.</p> <p>3.3.1.b Research on structural materials for analysis and modelling of ageing of components and structures with a view to improving residual lifetime assessment techniques.</p> <p>3.3.1.c Improvement of the safety assessments of innovative reactor designs in synergy with the Generation IV International Forum (GIF).</p> <p>3.3.1.d Generation of reference samples and scientific data on the safety performance and development of codes and modelling for safety assessment of both conventional and innovative nuclear fuels in operational, transient and accident conditions.</p> <p>3.3.1.e Support the EU's internal policy on nuclear safety by providing technical and scientific assistance to the implementation of the EU Nuclear Safety, Nuclear Waste and Spent Fuel and Basic Safety Standards directives and related EU policy.</p> <p>3.3.2 Safety of spent fuel, radioactive waste management and nuclear decommissioning</p> <p>3.3.2.a Development of techniques for spent fuel and nuclear waste characterisation and study of the physico-chemical mechanisms relating to the long-term storage of spent fuel and disposal of nuclear waste.</p> <p>3.3.2.b Obtention of scientific data and preparation of reference samples of spent fuel to reduce the radiological toxicity of wastes, and for the safety assessment of recycling technologies.</p>	<p>Policy related outputs</p>	<p>Throughout 2016</p> <p>Target value: 257</p>

<p>3.3.2.c Development and assessment of innovative technologies and techniques applied to nuclear decommissioning.</p> <p>3.3.3 Nuclear emergency preparedness and response (EP&amp;R), environmental monitoring and radiation protection</p> <p>3.3.3.a support for the Member States on the exchange of information in case of emergency and on radiological monitoring and measurements relating to radioactivity in the environment, including maintaining the related database and reporting system;</p> <p>3.3.3.b Enhancement of preparedness for nuclear or radiological incidents through benchmarking of environmental dispersion models and development of severe accident modelling, radiological source term evaluation and accident management of nuclear power plants.</p> <p>3.3.4 Nuclear safeguards</p> <p>3.3.4.a Development of destructive and non-destructive methods and techniques and development of standards to support the Euratom safeguards system. Operation of the Safeguards on-site laboratories and in-field support for Euratom inspections.</p> <p>3.3.4.b Development of containment and surveillance techniques in the nuclear fuel cycle process, from enrichment facilities to geological final disposal.</p> <p>3.3.5 Promote excellence in the nuclear science base for standardisation</p> <p>3.3.5.a Understanding the fundamental properties and behaviour of innovative nuclear and structural materials for safety assessment and model validation.</p> <p>3.3.5.b Support to standardisation and harmonisation of radiological measurement methods in the EU and collaboration with key partner countries and international organisations (IAEA, OECD-NEA)</p> <p>3.3.5.c Set up and operation of a reference centre for radioactivity measurements in food air, water and soil.</p> <p>3.3.6 Knowledge management, training and education</p> <p>3.3.6.a Monitoring EU trends in human resources in the nuclear energy field and facilitating the mobility of human resources in the sector throughout the EU. Developing tools for knowledge management and preserving the EU's expertise.</p> <p>3.3.6.b Preserving, aggregating and disseminating specific scientific and technical knowledge related to nuclear safety, safeguards and security by providing operational support and training and by increasing</p>		
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access to the JRC nuclear laboratories for researchers from EU Member States and international organisations. 3.3.6.c Reviewing the tools used for public participation in the nuclear energy field, and developing a knowledge centre for transparency governance.		
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Relevant general objective 4: A Deeper and Fairer Internal Market with a Strengthened Industrial Base		
<b>Specific objectives 4.1 to 4.3 (contributing to H2020 Specific Objective 17):</b> <b>A well-informed European policy-making, appropriately and timely supported by the JRC through the provision of high quality and innovative scientific and technical studies, tools, data, materials, models and standards, in the following areas:</b> (Specific objective 4.1) Internal Market, Industry, Entrepreneurship and SME (Specific objective 4.2) Intellectual Property Rights (Specific objective 4.3) Customs policy and the fight against fraud		Related to spending programme: H2020
Main outputs in 2016:		
Policy-related outputs / expenditure outputs <sup>1</sup>		
Description	Indicator	Target date
<b>JRC Key Orientations in the area of "Internal Market, Industry, Entrepreneurship and SMEs":</b> 4.1.a Industrial policy development, notably to support standardisation via pre-, co- and peri-normative research, reference measurements and (nano-)materials; Eurocodes; 4.1.b EU space policy, notably for Galileo and the European Geostationary Navigation Overlay Service (EGNOS); Infrastructure related R&D actions 4.1.c Support to the regulatory framework on medical devices, including in vitro diagnostics, and for cosmetics, including promotion of alternative methodologies to animal testing. 4.1.d Support to the development of nuclear techniques for medical therapy and diagnosis and to the quantitative standardisation of nuclear medicine.	Policy related outputs	Throughout 2016  Target value: 177
<b>JRC Key Orientations in the area of "Intellectual Property Rights":</b> 4.2.a Manage the JRC's and the Commission's portfolio of intellectual property rights.	Policy related outputs	Throughout 2016  Target value: 8
<b>JRC Key Orientations in the area of "Customs policy and the fight against fraud":</b> 4.3.a Carry out research and analysis, and develop new technologies, material, applications and systems to contribute to combating fraud and other types of criminal activity which threatens the supply chain 4.3.b Establish pilot programmes to build capacity among and educate custom authorities on how to use such applications or technologies and share	Policy related outputs	Throughout 2016  Target value: 17

information and best practice.		
<b>Relevant general objective 9: Europe as a Stronger Global Actor</b>		
<b>Specific objectives 9.1 to 9.3 (contributing to H2020 Specific Objective 17 and to EURATOM Research &amp; Training Programme Specific Objectives 9, 10, 11, 12 and 13):</b> A well-informed European policy-making, appropriately and timely supported by the JRC through the provision of high quality and innovative scientific and technical studies, tools, data, materials, models and standards, in the following areas: (Specific objective 9.1) <b>Global Safety and Security</b> (Specific objective 9.2) <b>International Cooperation and Development</b> (Specific objective 9.3) <b>Associated and Neighbourhood Countries</b>		Related to spending programme: H2020 and Euratom
<b>Main outputs in 2016:</b>		
<b>Policy-related outputs / expenditure outputs<sup>1</sup></b>		
<b>Description</b>	<b>Indicator</b>	<b>Target date</b>
<b>JRC Key Orientations in the area of "Global Safety and Security":</b> 9.1.1 Fight against trans regional and global threats including disaster resilience and crisis management 9.1.1.a Disaster resilience and crisis management – provide scientific and analytical services, develop tools and build capacity to support the entire disaster risk management cycle (disaster prevention, preparedness and response) 9.1.1.b Fight against global, trans-regional and emerging threats – support activities contributing to Stability and Peace 9.1.2 Global nuclear safety and security 9.1.2.a Technical assistance and scientific support for the implementation of the EU policies in the fields of nuclear safety (Instrument for Nuclear Safety Cooperation), nuclear safeguards (European Commission Cooperative Support Programme to the IAEA) and nuclear security (Instrument contributing to Stability and Peace and International Working Groups membership). 9.1.2.b Development of methods, technologies and standards for the detection of nuclear and radioactive materials outside regulatory control and fighting its illicit trafficking; supporting the EU policy on nuclear non-proliferation through the implementation of the EU export control regime and the analysis of open source information. Operational support to Member States and international organisations. 9.1.2.c Support for Member States, partner countries and international institutions (IAEA, and others) to enhance the technical knowledge on nuclear security using the European Nuclear Security Training Centre (EUSECTRA). Training to support the implementation of the EU non-proliferation policy.	Policy related outputs	Throughout 2016  Target value: 164

<p>9.1.2.d Contributing to safeguards, proliferation resistance and physical protection of innovative designs of nuclear reactors in synergy with the Generation IV International Forum (GIF).</p>		
<p><b>JRC Key Orientations in the area of "International Cooperation and Development":</b></p> <p>9.2.1 2030 Agenda on Sustainable Development</p> <p>9.2.1.a Support the monitoring and implementation of Sustainable Development Goals (SDGs) by developing and integrating knowledge management tools and organising information on related policies, indicators, methods and data, facilitating the integration of social, economic and environmental information necessary to reach the SDG targets.</p> <p>9.2.2 Food and nutrition security, rural development and sustainable agriculture<sup>7</sup></p> <p>9.2.2.a Monitor food and nutrition security, agricultural and natural resources, support information systems, and carry out research activities while contributing to sustainable agriculture, nutrition and resilience in developing countries.</p> <p>9.2.3 Climate change, environment, natural resources, and water</p> <p>9.2.3.a analysis, capacity building, provision of data, maps and methodologies on the extent, vulnerability to, and risk of current and future weather-driven disasters in developing countries</p> <p>9.2.3.b monitoring, scientific advice, development of ICT tools, dissemination of information, and capacity building for partners in developing countries, to support related multilateral or bilateral agreements and cooperation initiatives</p> <p>9.2.4 Energy</p> <p>9.2.4.a Map out and monitor activities, develop GIS (geographic information systems) tools, provide technical assistance, share best practice and build capacity in support of international, bilateral and regional energy cooperation initiatives, including on renewable energy.</p> <p>9.2.5 Humanitarian-, development- and cooperation horizontal policies</p> <p>9.2.5.a Develop methodologies, indicators and ICT tools, and carry out macroeconomic analyses of development issues in support of the Agenda for Change, policy coherence for development, and aid effectiveness and transparency, with a focus on measuring the impact of EU aid and cooperation on eradicating poverty.</p>	<p>Policy related outputs</p>	<p>- Throughout 2016</p> <p>Target value: 61</p>
<p><b>JRC Key Orientations in the area of "Associated and Neighbourhood Countries":</b></p> <p>9.3.a Provide support to the Enlargement and H2020</p>	<p>Policy related outputs</p>	<p>Throughout 2016</p> <p>Target value: 8</p>

Associated Countries to address, through scientific evidence, key national priorities, and promote their participation in Smart Specialisation exercises. 9.3.b Provide support for regional development policies through networking activities, capacity building and enhancing complementarity and integration with the macro-regional strategies.		
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General objective 1: A New Boost for Jobs, Growth and Investment

General objective 3: A Resilient Energy Union with a Forward-Looking Climate Change Policy

General objective 4: A Deeper and Fairer Internal Market with a Strengthened Industrial Base

General objective 9: Europe as a Stronger Global Actor

**Specific objective 10: In order to ensure the most relevant and timely scientific support to the European policy-making, the JRC will effectively and efficiently coordinate its activities related to the management of the JRC WP cycle, of the relations with policy DGs and other policy and scientific stakeholders and knowledge management.**

Related to spending programme:  
H2020 and Euratom

Note: this specific objective refers to the policy support coordination activities covering all areas of work of the JRC (ie. all CGOs, as explained in the "Strategy" chapter of the Strategic Plan)

**Main outputs in 2016:**

**Policy-related outputs / expenditure outputs<sup>1</sup>**

Description	Indicator	Target date	Responsible unit
1) Work Programme management	Planning: Adopted Work Programme 2017-18;- Periodic update of 2016 WP Evaluation: Performance and Impact Review (PRIME), ex-ante assessment - Implementation of the WP cycle review (1st & 2nd phase), including IT support	Throughout 2016  - Q1/Q2  - Throughout 2016	JRC.A.01/02/03/04
2) Science Policy interface	- Successful DG bilateral meetings - Updated MoU to reflect WP - Strengthened JRC role in better regulation initiatives - Monitoring of policy developments in the DGs - Participation in relevant initiatives , e.g. Task Forces, (Impact Assessment) Steering Groups, Inter-Service Groups - High quality input into inter-service consultations; high quality briefings, concept notes, policy briefs;- key contributions to the training on EU decision making	- Throughout the year	JRC.A.01 JRC.A.01 JRC.A.01 JRC.A.01 JRC.A.01 JRC.A.01 JRC.A.01

	<ul style="list-style-type: none"> <li>- Key contributions to main JRC policy events e.g. related to social aspects of EMU, &amp; human capital in territorial development</li> <li>- Key contributions to the summer school 2017</li> </ul>	<ul style="list-style-type: none"> <li>- Q2 &amp; Q4</li> <li>- Q3</li> </ul>	<p>JRC.A.01</p> <p>JRC.A.01</p>
3) Impact assessment Rolling review of JRC's contributions to impact assessments with a view to strengthening the JRC's role in future IAs.	Rolling inventory of JRC's contribution for impact assessments in the fields of Sustainability, Resource Efficiency and Agriculture for 2016	- Throughout the year	JRC.A.03
4) Modelling - Contribute to making MIDAS a Commission-wide inventory of models	Regular reviews of functionalities and contents of MIDAS in the first phase of implementation as a COM-wide inventory	- Q4	JRC.A.03
5) Coordination of international, inter-institutional and stakeholder relations  5a. Inter -institutional relations  5b. Stakeholders and partnerships  5c. JRC governance and outreach	5a. Strengthened relations with the European Parliament and national parliaments: (2016 edition of the Science meets Parliaments) and develop further an active collaboration with other EU institutions and bodies 5b. Cooperation with key partner countries and international organisations: Management of JRC's External agreements: Develop structured collaboration (non-nuclear area) with key partner countries and international organisations 5c. JRC Weekly Briefing and other regular products: Science and policy monthly newsletter	Q1-Q4  Q1-Q4  Q1-Q4	JRC.A.05
6) Coordination of the planning, reporting, monitoring and evaluation in the JRC 6a. Coordination of the Annual Activity Report Process 6b. Annual evaluation of the JRC Work Programme (JRC Productivity and Impact Review, PRIME) 6c. Coordination of ex-ante assessment for WP 2016-17 6d. Coordination of the Management Plan Process 6e. JRC indicator system (MP, AAR, TdeB).	6a. JRC Annual Activity Report 2015 6b. - JRC Productivity and Impact Review (PRIME) 2015 implemented - JRC Productivity and Impact Report 2015 including a mapping of JRC outputs and impacts 6c. Ex-ante assessment report 6d. JRC Management Plan 2017 6e. Up-to-date, consistent and relevant indicator system 6f. JRC Excellence Mapping Report 2016	Q1 Q1 / Q2  Q2-Q3  Q4 Throughout the year Q4	JRC.A.02

6f) Excellence Mapping to feed in mandatory mid-term evaluation of JRC			
7) Development and implementation of strategy, processes and infrastructure for JRC knowledge management and dissemination	7a. Further development of the competence mapping (introduction of info on scientists' publications quality and impact) 7b. Data policy: publication of data in the EU Data Portal 7c. Set-up of the operational structure of the ICT scientific governance 7d. Implementation of the output review mechanism in Pubsy 7e. JPB tool made available to the other EC services	3 <sup>rd</sup> phase: Q4 Q2 Q2 Q2 Q4	JRC.A.02
8) Technical and administrative coordination of the JRC Euratom Steering Committee (JESC). Monitoring and reporting of the implementation of JESC decisions and actions. 8a. Preparation of JESC 8b. Monitoring/reporting	8a. Agendas, briefings, concept papers 8b. Minutes of meetings, follow-up actions, implementation report	Q2 and Q4 Q2 and Q4	JRC.A.04
9) Mid-term evaluation of the Euratom Programme 2014-2018	- Report on the activities performed during the period	Q3	JRC.A.04

**Specific objective 11: To ensure the highest quality of its policy support, the JRC will effectively and efficiently maintain scientific excellence in its core competences**

Related to spending programme(s) H2020 and Euratom

Note: this specific objective refers to all areas of work of the JRC (ie. all CGOs, as explained in the "Strategy" chapter of the Strategic Plan)

**Main outputs in 2016:**

**Policy-related outputs / expenditure outputs<sup>1</sup>**

Description	Indicator	Target date	Responsible unit
Publication of scientific results in peer reviewed journals. Scientific results in peer-reviewed journals co-authored with peer organisations beyond Europe. Scientific results of exploratory research	1. Peer-reviewed publications listed in SCI-e and SSCI	Throughout 2016 Target value: >680	All JRC institutes

## PART 2. Organisational management outputs for the year

This part groups the objectives for the activities that aim at increasing the overall effectiveness and the overall efficiency and quality of the organisational management functions of the JRC, namely Human Resource Management, Financial management (internal control and risk management), Information management aspects, External communication and Infrastructure.

### A. Human Resource Management

In support of its business operations, the JRC aims to "Recruit, train, assess, motivate and retain highly qualified staff so that effective and efficient operation of the DG as well as promotion of equal opportunities within the DG are ensured". During 2016 the JRC plans to focus on taking into account the related competence gaps present at the JRC and mapping the activity areas of all support services which will contribute towards the end objective of having a JRC structure which is competence oriented and linked to its strategic areas.

In 2016 the JRC aims to contribute actively to the implementation of the Commission-wide HR actions of staff engagement and their well-being programme, such as the fit@work programme across its different sites. The development of the talent management programme to improve the female representation in middle management positions plays a very important part of the Human Resource management objectives for 2016.

**Objective: The DG deploys effectively its resources in support of the delivery of the Commission's priorities and core business, has a competent and engaged workforce, which is driven by an effective and gender-balanced management and which can deploy its full potential within supportive and healthy working conditions.**

#### Main outputs in 2016:

Description	Indicator	Target (2016)
<p>1. In order to improve the female representation in middle management positions according to SEC(2015)336 the JRC's plans the following main outputs:</p> <ul style="list-style-type: none"> <li>- Tools developed to encourage women to apply for middle management positions</li> <li>- Full development of the pilot talent management programme for women initiated in 2015</li> <li>- Translation of the Commission's Diversity Strategy 2016-2019 into a JRC Action Plan</li> </ul>	<ul style="list-style-type: none"> <li>- Number of completed phases of the talent management programme</li> <li>- Participants' evaluation of the talent management programme</li> </ul>	<p>Pilot exercise with 61 female colleagues (third phase completed by December 2016)</p> <p>Positive feedback from participants and recommendation of the programme to other staff</p>
<p>2. In the context of the JRC's implementation of the "fit@work" Commission Programme for 2016, the main outputs will be:</p>	<ul style="list-style-type: none"> <li>- Number of Training and awareness-raising activities carried out to promote a fit@work culture in all JRC sites</li> <li>- A review of the social and sports</li> </ul>	<p>Throughout the year</p>

<p>Training, awareness-raising activities and review of the social and sports infrastructure</p> <p>Revive the principles of the "Senior Management Charter on Equal Opportunities and working conditions"</p>	<p>infrastructure needs at all JRC sites</p> <ul style="list-style-type: none"> <li>- Number of nutrition awareness actions in the canteens, social and cultural activities, specific training programmes and ergonomic actions in all JRC locations</li> <li>- Number of events promoting the role of the medical services and the social support to staff in all JRC locations</li> <li>- Results from surveys carried out as a means to get staff opinion on ongoing actions on the needs and suggestions for future initiatives</li> </ul>	
<p>3. In order to increase staff engagement the following main outputs are planned:</p> <ul style="list-style-type: none"> <li>- Implementation of the talent management, leadership and mobility programmes covering diversity, competencies and geographical dimensions</li> <li>- Implementation of the JRC Learning Priorities 2014-2016</li> <li>- Migration to the new Learning Management System</li> <li>- Introduction of best practice sharing for giving feedback, both formal and informal, for providing recognition, reward and celebration of outstanding achievements</li> <li>- Comprehensive staff induction, recognition and exit schemes</li> </ul>	<ul style="list-style-type: none"> <li>- Nr of events: talent management, leadership and mobility programmes covering diversity, competencies and geographical dimensions</li> <li>- Nr of Implementation of the JRC Learning Priorities 2014-2016</li> <li>- Migration to the new Learning Management System completed</li> <li>- Comprehensive staff induction, recognition and exit schemes implemented</li> <li>- Number of reward and celebration of outstanding achievements</li> </ul>	<p>Throughout the year</p>

## **B. Financial Management: Internal control and Risk management**

**Overarching objective: The Authorising Officer by Delegation should have reasonable assurance that resources have been used in accordance with the principles of sound financial management, and that the control procedures put in place give the necessary guarantees concerning the legality and regularity of the underlying transactions including prevention, detection, correction and follow-up of fraud and irregularities.**

The JRC has put in place the organisational structure and the internal control systems suited to the achievement of the policy and control objectives, in accordance with the Commission's internal control standards and having due regard to the risks associated with the environment in which it operates.

The JRC is committed to implement, maintain and report on an effective and reliable internal control system, so that reasonable assurance can be given that the resources assigned are used according to the principles of sound financial management; that the risk of errors are minimised and do not exceed 2%; that the control procedures put in place give the necessary guarantees concerning the legality and the regularity of the underlying transactions; and that the controls put in place are cost-effective.

During 2016 the JRC will revise its Anti-Fraud Strategy (AFS) and its related action plan ensure that the controls in place adequately cover the risk of fraud and that preventive measures are implemented as foreseen in the AFS.

**Objective 1 : Effective and reliable internal control system giving the necessary guarantees concerning the legality and the regularity of the underlying transactions**

**Main outputs in 2016:**

Description	Indicators	Target (2016)
<p>The target for 2016 will be achieved by the following outputs:</p> <ul style="list-style-type: none"> <li>- Training courses, awareness-raising activities, regular finance and procurement network meetings, exchange of best practise and communication through JRC Connected to raise awareness and competence on procurement and financial issues</li> <li>- Development of a new JRC corporate procurement strategy</li> <li>- Further development of the functionalities of the Public Procurement and Management Tool (PPMT) aimed at completing the support of the full procurement process, including pre-award</li> <li>- Enhancement of the corporate dimension of PPMT in order to serve as the Commission's back-office tool for the procurement process.</li> </ul>	<ol style="list-style-type: none"> <li>1. Estimated residual error rate</li> <li>2. Estimated overall amount at risk for 2016 for the entire budget under the JRC's responsibility</li> <li>3. Estimated future corrections</li> <li>4. Proportion of exceptions</li> <li>5. Quality of procurement procedures submitted to the Public Procurement Advisory Group (PPAG)</li> </ol>	<ol style="list-style-type: none"> <li>1. Below the JRC's materiality criteria of 2%</li> <li>2. Amount at risk below the JRC's materiality criteria of 2%</li> <li>3. 100% recoveries and correction of specific errors</li> <li>4. &lt; 1% of transactions</li> <li>5. ≥95%</li> </ol> <p>The JRC intends to continuously improve its internal control system to ensure the adequate management of the risks relating to legality and regularity of the underlying transactions, taking into account the nature of the purchases, payments and revenue concerned.</p>

**Objective 2: Effective and reliable internal control system in line with sound financial management.**

**Main outputs in 2016:**

Description	Indicators	Target (2016)
<p>1 Conclusion reached on cost effectiveness of controls – Area 'Procurement' to enable the JRC to adapt the frequency and intensity of controls taking into account the related risk levels.</p>	<p><b>Overall indicator 1:</b> The overall cost of control relating to all control costs incurred in the procurement process.  <b>Sub-indicator 1(a):</b> Cost of controls of the procurement stage up to selection of the offer and evaluation.  <b>Sub-indicator 1(b):</b> Cost of controls of the financial transaction  <b>Sub-indicator 1(c):</b> Cost of supervisory measures (ex-post controls)</p>	<p>Overall indicator 1: &lt;6%                      Sub-indicators: 1(a) &lt;4%                      1(b) &lt;4%                      1(c) &lt;0.4%</p> <p>The targets for 2016 are set taking into account that these indicator are very much dependent on the number and value of procurement procedures and financial transactions executed and the time spent by staff on the related control activities.</p>
<p>2. Conclusion reached on cost effectiveness of controls – Area 'Contracted Income' to enable the JRC to adapt the frequency and intensity of controls taking into account the related risk levels.</p>	<p>The overall cost of controls of the 3 stages of the competitive process / total competitive projects value</p>	<p>Target for 2016 is set at <math>\leq 0.3\%</math>; taking into account that this indicator is very much dependent on the number and value of competitive project proposals and the time spent by staff on the related control activities.</p>
<p>3. Internal Control Standards awareness campaign taking the form of training courses, workshops, events and the use of JRC Connected as a communication tool.</p>	<p>Implementation of Internal Control Standards in the JRC measured by the average of scores obtained from the annual survey on the implementation of Internal Control Standards. (Scores range between 1 ("Disagree") and 5 ("Agree").</p>	<p>3.5</p>
<p>4. The main outputs will be:                      - Payments, registered, processed and approved within legal time limits                      - Encouragement of companies to make use of the Commission portal for electronic invoicing to further improve the payment delays.</p>	<p>Timeliness of payments</p>	<p><math>\geq 95\%</math></p>

**Objective 3: Minimisation of the risk of fraud through application of effective anti-fraud measures, integrated in all activities of the DG, based on the DG's anti-fraud strategy (AFS) aimed at the prevention, detection and reparation of fraud.**

**Main outputs in 2016:**

Indicators	Targets (2016)
1. Updated anti-fraud strategy (AFS) of the JRC, elaborated on the basis of the methodology provided by OLAF.	Update of the JRC's AFS by the end of the first quarter (Q1).
2. Regular measurement of the ethical climate and the fraud awareness for target population(s) as identified in the JRC's AFS. The indicator is measured taking into account the average of scores obtained from the annual survey on the implementation of Internal Control Standards quantifying the anti-fraud awareness and the ethical climate using the rating scale of 1 ("Disagree") and 5 ("Agree").	Ethical climate rating of 4  The target will be achieved by the implementation of the AFS action plan specifically by the actions related to training and awareness-raising in the area of anti-fraud and ethics.
3. Regular monitoring of the implementation of the anti-fraud strategy and reporting on its result to management.	By the end of the first quarter (Q1).

### C. Better Regulation (only for DGs managing regulatory acquis)

N/A for JRC

### D. Information management aspects

**Objective:** Information and knowledge in your DG is shared and reusable by other DGs. Important documents are registered, filed and retrievable

**Main outputs in 2016:**

Indicators	Targets (2016)
1. Degree of compliance with the Document Management e-Domec policy rules and ICS 11 requirements	75% to be achieved by the full implementation of the JRC's Document Management strategy and its related action plan, in response to the internal auditors' recommendations, and in accordance with e-Domec requirements.

## E. External communication activities

### Significant communication actions for 2016

No.	Communication action	Target date	EC political priority addressed	DG JRC Strategic plan / JRC thematic focus areas	Output /outcome Indicators
1.	JRC Annual Conference (In June 2016) focused on Human Capital and Territorial Development – organisation, publication(s) and all communication tools related to such highlight event	Third quarter (11 October 2016)	Towards a New Policy on Migration	Migration and Territorial Development	Number of participants (Target 300) and indirect audience reach; Satisfaction rate of participants
2.	Official launch events of several knowledge and competence centres run by the JRC to support EC political priorities such as: the Competence Centre on Composite Indicators and Scoreboards (COIN), Micro-economic evaluation, Text Mining as well as Knowledge Centre for Territorial Policies, Migration and Demography and more.	First, second and third Quarter	<p>A Resilient Energy Union with a Forward-Looking Climate Change Policy</p> <p>A deeper and fairer Internal Market with a Strengthened Industrial Base</p> <p>A New Boost For Jobs, Growth and Investment</p> <p>A Deeper and Fairer Economic and Monetary Union</p>	<p>Economy, Finance and Markets</p> <p>Energy and Transport</p> <p>Data and Digital Transformation</p> <p>Migration and Territorial Development</p>	<p>5 centres launched;</p> <p>Number of participants (100 stakeholders per launch)</p> <p>Indirect audience reach;</p> <p>Number of people who engage in follow-up activities;</p>
3.	Open Day in Ispra, Italy, on the theme "Making Sense of Science" (provisional), with strong outreach and public engagement and online coverage; other Open Days initiatives on other JRC sites (Geel Karlsruhe, Petten, Sevilla)	Second quarter	A Union of Democratic Change	<p>Education, Skills and Employment</p> <p>Data and Digital Transformation</p>	<p>Number of participants (Target 10 000 visitors);</p> <p>Number of participants stating their likelihood to share the information learnt;</p> <p>Number of people reached on social media (views, shares, discussions);</p> <p>Satisfaction</p>

					rate of visitors
4.	Organisation of stakeholder events eg 'Science meets Parliaments', launch of the 'Energy Efficiency Platform' (05/04/16), JRC Policy Research Forum 'The Social Dimension of the Economic and Monetary Union' (24-26/05/16).	All year	At least four EC political priorities addressed	At least four JRC thematic focus areas addressed	10 events organised with at least 100 participants per event in given policy area
5.	4 Euronews Science Reports, e.g. on 'Portable Emissions Monitoring Systems (PEMS)', VELA 8 & 9 (further topics to be defined)	Third and fourth quarter	At least four EC political priorities addressed	At least four JRC thematic focus areas addressed	People reached Number of views online
6.	Production of key publications such as: JRC Annual Report 2015, Environmental Sustainability report (thematic report), JRC Annual Conference Report	First and second quarter	All EC political priorities addressed	ALL JRC thematic focus areas addressed	Number of materials distributed;
7.	Further development of the JRC Science Hub – continue the web rationalisation, more focused on political priorities, further develop collaborative communities of practice enabling more dialogue with stakeholders	All year	Most EC political priorities addressed	Most thematic focus areas	Number of visits (3 million in 2016), page views (8 million 2016), most used devices; Engagement rate on communities of practice.
8.	Continuation of the JRC Visits' Programme in Ispra, Italy and on other JRC sites, including the development of a web driven JRC visitors' centre experience for wider outreach and public engagement	All year	Most EC political priorities addressed	Most JRC thematic focus areas addressed	Number of visits on all JRC sites; Number of views on the internet and downloads
9.	Initiate and develop science communication actions such as: the JRC science blog, policy lab blog, interactive tools explaining complex scientific work and other data visualisation online products (such as infographics and animation videos) to explain the science underpinning the 2016 key initiatives implementing EC political	All year	Most EC political priorities addressed	Most EC political priorities addressed	Number of mentioned products; number of views; number of blog posts; number of comments; engagement rate: shares, likes,

	priorities					discussions;	
10.	European Commission's contribution to and participation in the scientific programmes of European and International science events and fora such as: EuroScience Open Forum (ESOF), AAAS, Dutch Presidency Open Science Conference etc.	Second and third quarters	Most political priorities addressed	EC	Most political priorities addressed	EC	Number of participants who noticed EC participation; Indirect audience reach through traditional and social media

### For external communication overall spending:

Annual communication spending (based on estimated commitments):	
Baseline (Year n-1):	Target (Year 2016): 1.47M€

## F. Infrastructure

### 1. Infrastructure Development

**Objective:**

**Infrastructure development:** Harmonise the approach to infrastructure development across the JRC.

**Energy conservation:** Drive energy efficiency gains.

**Operational efficiency:** Increase efficiency of site-related facilities and services.

**Main outputs in 2016:**

Description	Indicators	Target (2016)
1a. Surface area of new buildings delivered and buildings demolished and refurbished with respect to Directive 2012/27/EU	Surface area calculations	A minimum of 3% for refurbishment.  Main output: An annual assessment of the total surface not meeting the national minimal standards in terms of energy efficiency on the basis of article 5 of the Directive 2012/27/EU.
1b. JRC Infrastructure Development governance structure	100% implementation of the governance structure	Development of the infrastructure governance strategy by October 2016.

### 2. Decommissioning

**Objective:**

Implement the Decommissioning & Waste Management Programme (see progress indicators)

Main outputs in 2016 (Main outputs for 2016 broken down according to the four relevant JRC sites can be found in Annex 6)

Description	Indicators	Target (2016)
Review of JRC		Q3

Decommissioning budget: finalisation of the review for the sites Ispra, Geel and Karlsruhe		
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### 3. Supplementary research programme for the High Flux Reactor in Petten

<b>Objective:</b> Operation of the high-flux reactor		
<b>Main outputs in 2016</b>		
<b>Description</b>	<b>Indicators</b>	<b>Target (2016)</b>
Finalisation of the HFR Supplementary program 2016-2019 Report on the operation of the HFR in the period 2014-2015	- 1 Council Decision of the New Supplementary programme  - 1 Report on the operation of the HFR in the period 2014-2015	- 1 Council Decision of the New Supplementary programme - 1 report on the operation of the HFR in the period 2014-2015

## G. Initiatives to improve economy and efficiency of financial and non-financial activities

1. In the context of the WP cycle review, the JRC is starting to plan the integration of relevant tools to improve efficiency (mainly through avoiding the duplication of information entry, leading also to lower maintenance cost for the separate tools). Moreover, the JRC is planning to further develop the JRC Project Browser (JPB) and the JRC Publications Repository (Pubsy) to meet the new needs identified by the WP cycle review working group (detailed planning, monitoring, project management, delivery of outputs, customer satisfaction survey). It is therefore intended to re-use JPB/Pubsy and further extend them, instead of building a brand new tool (or tools) from scratch, which would be more expensive and longer (generating delays of all sorts).
2. Discussions are ongoing with DG Environment about the customization of the JRC tool "Project Browser" (JPB) for use in DG ENV.
3. For the library activities, the possibility of making common use (with other DGs, e.g. DG RTD) of commercial publications databases and analytical tools was foreseen to lead to lower licenses costs, whilst the training on the tools is less costly as well. However, the administrative costs related to organising this common use diminish the benefits of the approach. At the same time, the possibility of having access to electronic journals shared with other DGs, e.g. DG EAC is being explored.
4. Negotiations with various providers of textual data (publications, news, patents are ongoing to defragment their contractual relationships with the Commission (e.g. Elsevier, Thomson

Reuters). The goal is to channel all contracts between these providers and the Commission into one contract for each provider and to increase value for money by increasing number of users and reduce administrative burden while maintaining total price of the contracts.

5. JRC is developing a tool to visualise and analyse funding proposals. Among others, this tool will allow to evaluate the impact of past funding, objectify decision-making for funding decision to be made, help detect fraudulent proposals, spot resubmission and double funding within or between funding programmes.
6. The JRC is leading a pilot project to improve the sharing of country-specific knowledge within the Commission with the aim of improving the Commission's analysis of the situation of each Member State, primarily for the purposes of the European Semester. Using the latest knowledge management tools and techniques should also give rise to some efficiency gains in the time spent to access useful knowledge and in collaborating across the Commission in this area. The pilots cover BE and IT.

## **Annexes to the Management Plan**

### **Annex 1. Performance tables**

The information is in the body of the document.

**Annex 2. Alignment between the European Union policies, Commission/DG's objectives, ABB activities, interventions and resources**

N/A

**Annex 3. Planning of evaluations and studies**

N/A

**Annex 4. Critical risks**

N/A

**Annex 5. Associated IT Resources Plan and Priorities**

N/A

## Annex 6. Indicators and outputs related to decommissioning

### Objective:

Implement the Decommissioning & Waste Management Programme (see progress indicators)

### Brief description:

The decommissioning activity aims to progressively dismantle the JRC's nuclear installations, either already obsolete (with no foreseen further use) or "future liabilities" (still in use). It also intends to treat "historical" waste (i.e. waste accumulated in the past) and waste arising from the dismantling operations. In 1999, the Commission decided to launch a programme to meet this objective. By this choice, the Commission shifted to the practice adopted by most EU Member States, preferring to start the decommissioning immediately after shutdown of the installations rather than deferring decommissioning in the hope that decreasing radiological activity would reduce the financial burden. The programme started in 1999 and is based on the assumption, made for budgetary planning reasons, that the decommissioning of the last nuclear installation and the final disposal of historical wastes will be achieved around 2032.

Due to the status of their facilities and to their respective environment, the Ispra site (IT) is engaged in a wider range of activities than the three other sites Geel (BE), Karlsruhe (DE) and Petten (NL), where most facilities are still operational.

### Main outputs in 2016

Description	Latest known result	Intermediate target (end of 2016)	Final target
1) Decommissioning and waste management activities at Ispra			
- Management of Nuclear Material and High Level Waste (HLW) up to its Intermediate Storage	Call for tender on hold, reprocessing as alternative option is under investigation	Result of feasibility study for possible reprocessing available	Evacuation of HLW ready (2020)
- Construction of waste treatment facility (grouting facility, GF)	The main supply contract has been resolved. Alternative options are on their way	Major civil works completed (building 41 C seismic upgrade)	GF in operation (beginning 2019)
- Qualification and supply of final waste package (FWP) containers			
- Radioactive waste characterisation and super-compaction	FWP qualification tests completed, final approval pending comfort letter from Sogin	Procurement of IP2 containers for FWP launched	FWP 1st production batch ready for use (in 2018)
- Evacuation of high level waste from "LCSR" facility (fuel remnants and activated material)			
- Temporary storage area for nuclear materials (TSA)	Licensing File for characterisation and super-compaction approval pending comfort letter from Sogin	File ("Piano Operativo") for characterisation and super-compaction approved by Safety Authorities;	Waste character. and treated by super-compaction: perform 5 campaigns by 2024
- Decommissioning of obsolete "FARO" nuclear facility and management of associated waste			
- Decommissioning of obsolete "STRRL" nuclear facility (excluding the tank farm facility, TF)	100% low & medium level waste managed; Fuel remnants &	No activity waiting for TSA commissioning	Fuel remnants transferred to ESSOR hot cells (in 2018)

	<p>activated material packaged</p> <p>Revision of authorisation file and update of internal emergency plan completed</p> <p>FARO facility dismantling 100% completed</p> <p>STRRL pre-decommissioning stopped at 36% pending approval of licence conversion by Ministry for Economic Development</p>	<p>Nuclear tests of the TSA authorised and performed</p> <p>"Clearance" of waste issued from facility decommissioning completed at 100%</p> <p>Obtain STRRL license conversion;</p>	<p>after TSA commissioning)</p> <p>TSA formally in operation (in 2017)</p> <p>"Cleared" waste evacuated and project closed (2017)</p> <p>STRRL facility (Phase 1/2 excl. Tank Farm) 100% decommissioned (Ph .1 by 2020, Ph.2 by 2022)</p>
<p>2) Pre-decommissioning - waste management activities Karlsruhe</p> <p>- Dismantling obsolete equipment (glove boxes)</p> <p>- Residual contribution to German waste repository (residual budget as updated by German Authorities in 2014)</p>	<p>70% (+ 5) glove boxes dismantled</p> <p>37% of budget committed</p>	<p>72% (+ 8) glove boxes dismantled</p> <p>42% of budget committed</p>	<p>100 % of legacy glove boxes dismantled (date not defined)</p> <p>100 % of the budget committed (in 2023)</p>
<p>3) Pre-decommissioning and waste management activities at Geel</p> <p>- Evacuation of nuclear material</p> <p>- Dismantling/evacuation obsolete VDG equipment</p>	<p>Material under contract evacuated</p> <p>8000 items identified</p>	<p>- Sorting, classification and conditioning of additional nuclear material identified for future evacuation</p> <p>- Conditioning, decontamination and preparation for respective waste streams</p>	<p>- 100 % materials evacuated</p> <p>- 100 % materials evacuated</p>
<p>4) Pre-decommissioning - waste management activities at Petten</p> <p>- transport and decontamination of steel waste for recycling; recovery of concentrated radioactive</p>	<p>- samples characterized, quotation expected</p>	<p>- transports performed</p>	<p>- steel decontaminated and recycled; activated steel and slag sent to COVRA</p>

<p>slag and transport of excessively activated steel samples and slag to COVRA storage facility</p> <ul style="list-style-type: none"> <li>- optimization study, transport and disposal of JRC legacy waste (un-irradiated experimental fuel) to COVRA</li> <li>- preparation of strategy for HFR decommissioning</li> <li>- Update of HFR decommissioning cost estimation (legal requirement, every 5 years) and decommissioning plan</li> </ul>	<ul style="list-style-type: none"> <li>- quotation received</li> <li>- latest report from 2012</li> </ul>	<ul style="list-style-type: none"> <li>- finalisation of feasibility study for combined transport (with ECN, NRG)</li> <li>-preparation of roadmap for development of strategy (1st Q)</li> <li>- contract will be signed early 2016</li> </ul>	<ul style="list-style-type: none"> <li>- all material evacuated</li> <li>- clarity about options for JRC to best prepare for HFR decommissioning</li> <li>- result available beginning of 2017</li> </ul>
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## Annex 7. Key orientations for the JRC's multi-annual work programme 2016-17

### 1 A new boost for jobs, growth and investment

#### 1.1 Agriculture and rural development

1.1.a Common Agricultural Policy (CAP) implementation – efficient and innovative tools for CAP implementation.

1.1.b CAP design, monitoring and evaluation – methods and tools for an integrated assessment of agriculture, rural development and the environment at farm and regional level (to allow CAP instruments to be tailored to environmental needs).

1.1.c Resource efficiency and climate change – model soil, water and ecosystem dynamics in order to improve their sustainable management in agricultural systems. Study the effects of climate change on the agricultural sector, assess the potential of climate change mitigation and adaptation strategies.

1.1.d Agricultural market, trade & food security – economic analysis of the competitiveness of the European agri-food sector, the performance of European agri-food systems (including the food chain), and their contribution to global food security.

#### 1.2 Education, culture, youth and sport

1.2.a Help monitor trends in education and training systems under EU policy strategies (e.g. Europe 2020 and the strategic framework for European cooperation in education and training, ET 2020); carry out research and analysis on education and training systems (e.g. on efficiency and equity in education investment, relevance for regional development and smart specialisation, education and societal wellbeing; integrating vulnerable groups such as migrants, refugees and other minorities through the education system and early childhood learning; the impact of digitisation on education and training practices; and key contribution of open and innovative education systems to fully embracing the digital era).<sup>1</sup>

1.2.b Contribute to the successful implementation of the ET2020 strategic framework for European cooperation in education and training and to the achievement of its objectives through evidence building actions.

1.2.c Develop evaluation tools to measure and monitor cultural activities and creativity at city level to assess the impact of specific culture-oriented initiatives on the economic and social development.

#### 1.3 Environment

##### 1.3.1 Protecting and enhancing our natural capital

1.3.1.a Freshwaters and the marine environment. Assessment of water resources and water use efficiency, floods and droughts, the monitoring of water chemical, biological and ecological quality, and nutrient cycles, and hydro-economic modelling for the Water Framework Directive and related directives. Develop standards and reference materials for water pollutants for all freshwaters and marine waters. Develop minimum quality requirements for water reuse (also contributing to the circular economy – see 1.3.2.a). Develop the knowledge base on oceans and coastal environments, in particular for the Marine Strategy Framework Directive, including by developing the JRC's marine modelling framework

1.3.1.b Biodiversity, forests and soils. Support the implementation of the EU Biodiversity Strategy, notably on the assessment of ecosystem services and natural capital accounting, the green infrastructure, the invasive alien species information system, and global biodiversity monitoring. Analyse and model forest resources and develop information systems on forests and forest fires in support of the EU Forest Strategy. Provide support to the EU Soil Thematic Strategy by modelling soil functions and developing the European Soil Data Centre (ESDAC). Monitor and model land and soil degradation and desertification, including for the Global Soil Partnership,

##### 1.3.2 A circular, green and competitive low carbon economy

1.3.2.a Sustainable consumption and production and the circular economy. Develop methodologies and life-cycle data for sustainable consumption and production policies, including the assessment of circular economy aspects such as reparability, durability, and recyclability, and the environmental footprint of products and organisations. Develop criteria

and measures for the implementation of product policy instruments and facilitate information exchange on best practice. Determine best available techniques and develop indicators for waste management, and assess how to optimise energy recovery from waste. Support the management of the EU raw materials knowledge base (see also KO 4.1.a) and develop quality criteria for secondary raw materials. Support the eco-innovation action plan, in particular the environmental technology verification programme.

1.3.2.b Environmental information and indicators. Develop environmental indicators in support of the roadmap to a resource-efficient Europe, the GDP-and-beyond roadmap and the integration of environment into other policies. Implement the infrastructure for spatial information in the European Community (INSPIRE) and the shared environmental information system.

1.3.2.c Policy impacts on sustainability and competitiveness. Carry out integrated sustainability assessments and impact assessments of EU policies based on land-use modelling and on life cycle thinking. Analyse the impact of environment policies on industrial competitiveness.

#### 1.3.3 Protection from environment-related risks to human health and wellbeing

1.3.3.a Chemicals and nanomaterials. Implement the chemicals legislation and support policy development in cross-cutting areas. Set up a toxicology knowledge base and an information platform for chemical monitoring, and support mutual acceptance of chemicals data at international level (e.g. at OECD). Develop and promote alternatives to animal testing. Develop methodologies, standards (e.g. at CEN/ISO) and reference materials for nanomaterials (also see key orientation 4.1), and support information generation and dissemination.

1.3.3.b Air quality, pollutant emissions and industrial accident prevention. Monitor and model ambient air quality and air emissions (for vehicle emissions see also key orientation 4.1.a). Carry out integrated impact assessments of air quality and climate policies. Support the implementation of EU air policies through quality programmes and the validation of innovative methods. Determine best available techniques for implementing the Industrial Emissions Directive. Develop information systems on, and carry out analyses of, industrial accidents.

#### 1.4 Maritime affairs and fisheries

1.4.a develop and apply biological, economic, social, spatial and genetic/genomic approaches to sustainable and competitive aquaculture and fisheries, in the EU and worldwide;

1.4.b develop marine knowledge for maritime spatial planning and coastal management, and the relevant knowledge management tools (EU's 'atlas of the seas' and Marine Competence Centre);

1.4.c improve EU maritime surveillance systems, and enhance their interoperability and provide support to implement selected actions from the EU Maritime Security Strategy.

#### 1.5 Health and food safety

##### 1.5.1 Health

1.5.1.a Contribution to the standardisation and improvement of health research, information, monitoring and measurements in support of evidence-based policy making. Harmonisation and development of quality healthcare management frameworks and new analytical methods;

1.5.1.b development of European health registry data and a Bioinformatics Platform for human 'omics' data;

1.5.1.c promotion of a healthier society, including actions in the field of physical activity, nutrition (diet, alcohol) science and health technologies.

##### 1.5.2 Food safety

1.5.2.a run the six EU reference laboratories, produce certified reference materials, develop harmonised/validated methods and new analytical tools;

1.5.2.b collect data and carry out analysis in support of evidence-based policy making and develop exposure assessment methods; fight against food fraud and provide support for impact assessments.

#### 1.6 Regional policy

1.6.a Territorial impact assessment of policies and investments. Developing an integrated modelling capacity that would make it possible to better assess the impact of investment and policies in regions and cities. These models provide information on the various sectoral and

multi-sectoral challenges and enable sketching alternative options and scenarios to be evaluated by policymakers and to contribute to the Europe 2020 targets and the European Semester process.

1.6.b Indices and quantitative analysis measuring economic, social and territorial cohesion at urban and regional level. Analysis – at urban, regional and macro-regional level<sup>2</sup> – of environmental sustainability and improvement of public health and wellbeing, including: ecosystem services; air and water quality; natural hazards and resource efficiency. This includes transport analysis in and between cities and between regions.

1.6.c Support for smart specialisation strategies. Integrated processes and methods to support the development, implementation and monitoring of smart specialisation strategies at national, regional and macro-regional level,<sup>3</sup> including for energy, global value added, higher education and lagging regions.

#### 1.7 Research, science and innovation

1.7.a Modelling, monitoring and analysis of the drivers of and socioeconomic barriers to research and innovation. Analysis and ex ante assessment of socioeconomic impact and effectiveness of policy instruments related to research and innovation at EU, Member State and regional level, as well as (cross-)sectoral level. Research and Innovation Observatory for the collection, production and dissemination of data and analysis related to national research and innovation policies, including thematic research and innovation policies, to feed into country monitoring in the European Semester. Indicators, scoreboards, information systems and web platforms for monitoring and analysing progress in the implementation of the Innovation Union and the European Research Area for Member States and key strategic partners. Foresight support for the identification of research and innovation priorities; application of horizon-scanning techniques and dissemination of findings

1.7.b Programme and project level support for fuel cells and hydrogen technologies under the Fuel Cells and Hydrogen 2 Joint Undertaking, typically in areas where cross-cutting is possible, such as safety regulations, codes and standards).

1.7.c Development of a low carbon energy observatory, providing data, analysis and intelligence on the state of the art of different energy supply technologies, their industrial development, market barriers and global competition.

1.7.d Data collection, analysis, dissemination and modelling on the progress of the bioeconomy, through the Bioeconomy Observatory, and assessment of sustainable biomass supply and demand at EU and global scale.

1.7.e Promotion of collaboration on intellectual property rights and technology.

#### 1.8 Transport

1.8.a transport innovation – support the strategic transport innovation agenda and develop the transport innovation and monitoring information system;

1.8.b alternative fuels – carry out pre-normative testing and contribute to development of standards supporting the implementation of the alternative fuels infrastructure in the frame of an Alternative Fuels Knowledge Centre; modelling of and support for electro-mobility standardisation;

1.8.c transport policy analysis – socioeconomic analysis of the transport sector, using transport models, quantitative methodologies, data, scenarios, and technology watching; harmonise transport data with spatial and environmental information;

1.8.d intelligent transport systems and electronic tools – technical support for the implementation of the ‘digital tachograph’, in particular the preparation of new technical specifications; support for the development of cooperative intelligent transport systems; development of electronic tools in support of quality inland water transport across Europe;

1.8.e safety and security – development of tools and databases on EU-wide multimodal accidents and incidents, as well as data visualisation and exploration tools for transport safety analysis, including the design of a concept for using big data for aviation safety; carry out performance testing and analysis of aviation security technologies.

#### 1.9 Employment, social affairs, skills and labour mobility

1.9.a Provide technical advice, methodological support, specialised training and exchange on counterfactual impact evaluations; macroeconomic analysis to assess the social return on investment approaches in the context of employment and social policy interventions (e.g. the European Social Fund and the Social Investment Package);

1.9.b Provide robust knowledge on both the distribution and evolution of skills and their links with employability, and on the impact of digitalisation on labour markets.

1.9.c Provide assessment studies, technical and scientific support in the area of protection of workers' health from possible risks arising from exposure to hazardous chemicals at the workplace, e.g. carcinogens.

## 2 A connected digital single market

### 2.1 Digital economy and society

2.1.a Analyse relating to: ICT-led innovations, the impact of digital technology on growth, jobs and consumer welfare in the EU, with a particular focus on policy priorities related to the EU digital single market and the digital agenda for Europe and the implementation of roaming legislation. Support EU regions and Member States in developing better digital growth strategies co-funded by EU cohesion policy.

2.1.b Develop IT tools and methodologies to analyse the radio spectrum inventory, and further develop technical expertise to support EU radio spectrum policy. Provide technical support relating to: the interoperability of e-infrastructures (supporting the digital European Research Area) and open access (supporting open science); make use of the convergence of big data with online tools (supporting citizen science), and assess the interoperability of energy services (in support of smart grids). Carry out analysis to develop policy options in the areas of cybersecurity, quantum technologies, ICT security, data protection and privacy issues, and to strengthen the information base on counterfeiting.

## 3 A resilient Energy Union with a forward-looking climate change policy

### 3.1 Climate action

#### 3.1.1 Climate policy development and implementation

3.1.1.a Delivering greenhouse gas emissions reductions – monitoring, reporting and verification of energy-related, product-related, agricultural and forestry emissions to meet legal obligations at EU and UNFCCC4/international level; modelling and other analyses on how to integrate these emissions into the 2030 climate and energy legislative framework. Compiling global emissions inventories.

3.1.1.b Economic and climate modelling/assessments in support of (long-term) low carbon and climate-resilient sustainable development (mitigation and adaptation policy) – assess climate change impacts, vulnerability, adaptation and mitigation policy options in the EU and globally; further develop in-house capacity to carry out such assessments.

3.1.1.c Earth system's science – advance understanding of how the climate system interacts with other parts of the Earth's system (e.g. ice and forests) and translate the findings into policy guidelines.

#### 3.1.2 Low carbon technologies

3.1.2.a Vehicle emissions – technical support for implementing and developing policy measures addressing short and long-term objectives for the decarbonisation of the transport sector, specifically, analysing the real-world fuel consumption and CO<sub>2</sub> emissions of light- and heavy-duty road vehicles. Support the assessment of eco-innovation CO<sub>2</sub> savings and derogations for small-volume manufacturers of cars and vans, and niche manufacturers of cars.

3.1.2.b Alternative fuels for transport – assess the environmental sustainability, technological development and costs of bioenergy and biofuels and of associated greenhouse gas emissions savings.

3.1.2.c NEW ENTRANTS RESERVE (NER 300) – technical support for the knowledge sharing facility of the NER 300 funding programme.

### 3.2 Energy

3.2.a Energy-climate-economy modelling – develop, validate, and run models for climate-energy-economy modelling; provide support for impact assessments and particular scenarios; develop the capacity to contribute to the design of the energy-climate reference scenario.

3.2.b Energy security – carry out security, safety, risk and techno-economic assessments of the EU's energy supply from conventional and unconventional resources (oil, natural gas). This includes the security of supply, transmission and distribution of gas and of electricity, as well as the safety of offshore oil and gas installations. Analyse privacy and cybersecurity in the energy sector.

3.2.c Internal energy market: assess the development of energy infrastructure and energy markets in the EU, including design of the retail market, new deal for energy consumers, integration of LNG and gas storage, super power grids, flexibility requirements and gas networks; develop methodologies for monetization of energy security in the evaluation of energy infrastructure projects, including Projects of Common Interest (PCI).

3.2.d Energy efficiency – analyse the development and deployment of energy efficiency technologies; support the implementation of the Energy Efficiency Directive’s provisions on efficient heating, cooling and electricity; support the Covenant of Mayors on energy efficiency; analyse smart power grids (including interoperability and smart-metering), including with modelling tools and cost-benefit analysis.

3.2.e Low carbon energy technologies – carry out techno-economic assessments of renewable energy technologies; support the implementation of the carbon capture and storage directive and analyse the potential for re-use of CO<sub>2</sub>; carry out energy modelling and analysis of energy demand, supply and consumption scenarios at national, regional and pan-European level.

3.2.f Research & innovation – Support the implementation of the integrated SET Plan through a strengthened information system (SETIS). Develop indicators that monitor the progress of energy technology innovation as an input to the annual State of the Energy Union report. Carry out relevant techno-economic analysis and energy systems modelling.

### 3.3 Safe, secure and sustainable use of the nuclear energy

#### 3.3.1 Safety of nuclear reactors and nuclear fuels

3.3.1.a Collection, analysis, and assessment of nuclear power plants’ operational experience worldwide, and dissemination of information to the Member States’ regulatory authorities.

3.3.1.b Research on structural materials for analysis and modelling of ageing of components and structures with a view to improving residual lifetime assessment techniques.

3.3.1.c Improvement of the safety assessments of innovative reactor designs in synergy with the Generation IV International Forum (GIF).

3.3.1.d Generation of reference samples and scientific data on the safety performance and development of codes and modelling for safety assessment of both conventional and innovative nuclear fuels in operational, transient and accident conditions.

3.3.1.e Support the EU’s internal policy on nuclear safety by providing technical and scientific assistance to the implementation of the EU Nuclear Safety, Nuclear Waste and Spent Fuel and Basic Safety Standards directives and related EU policy.

#### 3.3.2 Safety of spent fuel, radioactive waste management and nuclear decommissioning

3.3.2.a Development of techniques for spent fuel and nuclear waste characterisation and study of the physico-chemical mechanisms relating to the long-term storage of spent fuel and disposal of nuclear waste.

3.3.2.b Obtention of scientific data and preparation of reference samples of spent fuel to reduce the radiological toxicity of wastes, and for the safety assessment of recycling technologies.

3.3.2.c Development and assessment of innovative technologies and techniques applied to nuclear decommissioning. Exchange and dissemination of knowledge developed, findings and information.

#### 3.3.3 Nuclear emergency preparedness and response (EP&R), environmental monitoring and radiation protection

3.3.3.a support for the Member States on the exchange of information in case of emergency and on radiological monitoring and measurements relating to radioactivity in the environment, including maintaining the related database and reporting system;

3.3.3.b Enhancement of preparedness for nuclear or radiological incidents through benchmarking of environmental dispersion models and development of severe accident modelling, radiological source term evaluation and accident management of nuclear power plants.

#### 3.3.4 Nuclear safeguards

3.3.4.a Development of destructive and non-destructive methods and techniques and development of standards to support the Euratom safeguards system. Operation of the Safeguards on-site laboratories and in-field support for Euratom inspections.

3.3.4.b Development of containment and surveillance techniques in the nuclear fuel cycle process, from enrichment facilities to geological final disposal.

- 3.3.5 Promote excellence in the nuclear science base for standardisation
  - 3.3.5.a Understanding the fundamental properties and behaviour of innovative nuclear and structural materials for safety assessment and model validation.
  - 3.3.5.b Support to standardisation and harmonisation of radiological measurement methods in the EU and collaboration with key partner countries and international organisations (IAEA, OECD-NEA) in the field, by providing state-of-the-art nuclear reference materials, measurements and data and by developing and implementing relevant test standards, databases and assessment tools.
  - 3.3.5.c Set up and operation of a reference centre for radioactivity measurements in food air, water and soil.
- 3.3.6 Knowledge management, training and education
  - 3.3.6.a Monitoring EU trends in human resources in the nuclear energy field and facilitating the mobility of human resources in the sector throughout the EU. Developing tools for knowledge management and preserving the EU's expertise.
  - 3.3.6.b Preserving, aggregating and disseminating specific scientific and technical knowledge related to nuclear safety, safeguards and security by providing operational support and training and by increasing access to the JRC nuclear laboratories for researchers from EU Member States and international organisations.
  - 3.3.6.c Reviewing the tools used for public participation in the nuclear energy field, and developing a knowledge centre for transparency governance.

#### 4 A deeper and fairer internal market with a strengthened industrial base

##### 4.1 Internal market, industry, entrepreneurship and SMEs

- 4.1.a Industrial policy development, notably to support standardisation via pre-, co- and per-normative research, reference measurements and (nano-)materials; Eurocodes; vehicle emission test procedures and assessment of innovative technologies, including via international cooperation; sustainability and criticality of raw materials; advanced manufacturing and Key Enabling Technologies; collaborative economy, analysis for R&D Scoreboard, SMEs, Small Business Act, European Competitiveness Report and Fitness Checks; and structured public-private stakeholder dialogues.
- 4.1.b EU space policy, notably for Galileo and the European Geostationary Navigation Overlay Service (EGNOS), including signal, receivers and technical support to the oversight of Horizon 2020 Infrastructure related R&D actions, notably management of R&D assets and any resulting IPR; plus Copernicus, including applications and spatial information analysis tools, private sector innovation, civil and international space dialogues and implementation of services.
- 4.1.c Support to the regulatory framework on medical devices, including in vitro diagnostics, and for cosmetics, including promotion of alternative methodologies to animal testing.
- 4.1.d Support to the development of nuclear techniques for medical therapy and diagnosis and to the quantitative standardisation of nuclear medicine.

##### 4.2 Intellectual property rights

- 4.2.a Manage the JRC's and the Commission's portfolio of intellectual property rights. Advise and assist the Commission on intellectual property matters. Increase awareness of intellectual property rights within the Commission and in the European Parliament.

##### 4.3 Customs policy and the fight against fraud

- 4.3.a Carry out research and analysis, and develop new technologies, material, applications and systems to contribute to combating fraud and other types of criminal activity which threatens the supply chain. For example, by enhancing customs risk analysis by using trade data on the status and movement of cargo containers, supporting the fight against evasion of customs duties and quotas, as well as that against trafficked, smuggled or counterfeited goods; and analysing unknown substances.
- 4.3.b Establish pilot programmes to build capacity among and educate custom authorities on how to use such applications or technologies and share information and best practice.

#### 5 A deeper and fairer Economic and Monetary Union

##### 5.1 Economic and Monetary Union

- 5.1.a Model and carry out socioeconomic analysis of improved macroeconomic, budgetary, structural, and financial developments and policies in the EU. Develop analytical tools to enhance the quality and efficiency of the public sector by optimising public expenditure and

designing regulation in a smarter way.

5.1.b Social dimension of Economic and Monetary Union.

## 5.2 Financial stability, financial services and Capital Markets Union

5.2.a Quantitative analysis for the development of the Capital Markets Union as well as the completion of the Banking Union.

5.2.b Assess initiatives related to the regulation of the financial sector as well as new dynamics and risks. Maintain and further develop a data infrastructure for the EU financial sector analyses.

## 5.3 Taxation

### 5.3.1 Taxation policy

5.3.1.a Modelling and economic analysis of tax policies using the EUROMOD microsimulation model; measuring, by means of economic experiments, civic norms for cooperation across the EU to better understand the behavioural roots of different levels of tax compliance.

5.3.1.b Modelling to support the action plan for fair and efficient corporate taxation in the EU. Carry out analysis of the effects of corporate taxes and notably, develop modelling tools for assessing the impact of anti-avoidance rules, harmonisation of specific rules, changes in tax treaties and future policy initiatives taken at EU level.

## 6 A reasonable and balanced free trade agreement with the United States

### 6.1 Trade policy

6.1.a Provide methodological, modelling and analytical support with regard to the socioeconomic and environmental implications of external trade (e.g. quantification of non-tariff barriers; assessment of standards and regulatory coherence with trading partners; analysis of the impact on the interaction between external trade and the functioning of the single market, notably on promoting employment and value-added; production of multi-country input-output tables for analysing global production, trade and value chains).

## 7 An area of justice and fundamental rights based on mutual trust

### 7.1 Justice, consumers and gender equality

#### 7.1.1 Justice and gender equality

7.1.1.a Assist in measures that tackle online ethical and societal concerns: e.g. improving online personal data protection and cooperation between data protection supervisory authorities.

#### 7.1.2 Consumer policy and consumer rights

7.1.2.a Analysis of statistical indicators and methodologies to monitor consumer behaviour and market performance; analysis of information and communication technologies, and behavioural determinants, with the view of empowering consumers;

7.1.2.b Harmonised methods and scientific guidance for the chemical safety of non-food consumer products.

### 7.2 Home Affairs and Security

7.2.a Strengthening resilience, response to crises and diminishing chemical, biological, radiological and nuclear materials (CBRN) threats: improving the security and resilience of critical infrastructures, as well as identifying infrastructure vulnerabilities and inter-dependencies; developing crisis management technologies to deal effectively with such situations; supporting the implementation of CBRN-explosives (CBRN-E) related policies.

7.2.b Providing technical support, intelligence techniques and research to assist Member State authorities in law enforcement in areas such as cybercrime (including the online sexual abuse of children), open source intelligence and new psychoactive substances.

## 8 Towards a new policy on migration

### 8.1 Migration

8.1.a developing tools, methodologies and analysis aimed at enhancing the effectiveness of border security and control with also the view of understanding migratory flows, such as: technical systems concerning illegal border crossings; the possession of illegal travel documents; migratory push and pull factors; knowledge and tools for early warning, situational prediction and risk analysis in the maritime domain; the detection of substances and objects; the use of the Laissez-Passer travel document; 6 A JRC Knowledge Centre for Migration and Demography will provide policy-oriented research and

evidence-based analysis, observatories and partnerships, as well as capacity building.

## 9 Europe as a stronger global actor

### 9.1 Global safety and security

#### 9.1.1 Fight against trans regional and global threats including disaster resilience and crisis management

9.1.1.a Disaster resilience and crisis management – provide scientific and analytical services, develop tools and build capacity to support the entire disaster risk management cycle (disaster prevention, preparedness and response), including via a dedicated Knowledge Centre for Disaster Risk Management, and provide assistance for risk vulnerability and crisis assessment to improve the evidence base for humanitarian emergencies and disasters.

9.1.1.b Fight against global, trans-regional and emerging threats – support activities contributing to Stability and Peace, including analysis, provision of methods and tools, capacity building and collaboration with international partners for monitoring of raw materials, ensuring maritime security and counteracting global and trans-regional threats; develop early warning systems and capacity-building activities.

#### 9.1.2 Global nuclear safety and security

9.1.2.a Technical assistance and scientific support for the implementation of the EU policies in the fields of nuclear safety (Instrument for Nuclear Safety Cooperation), nuclear safeguards (European Commission Cooperative Support Programme to the IAEA) and nuclear security (Instrument contributing to Stability and Peace and International Working Groups membership).

9.1.2.b Development of methods, technologies and standards for the detection of nuclear and radioactive materials outside regulatory control and fighting its illicit trafficking; supporting the EU policy on nuclear non-proliferation through the implementation of the EU export control regime and the analysis of open source information. Operational support to Member States and international organisations.

9.1.2.c Support for Member States, partner countries and international institutions (IAEA, and others) to enhance the technical knowledge on nuclear security using the European Nuclear Security Training Centre (EUSECTRA). Training to support the implementation of the EU non-proliferation policy.

9.1.2.d Contributing to safeguards, proliferation resistance and physical protection of innovative designs of nuclear reactors in synergy with the Generation IV International Forum (GIF)..

### 9.2 International cooperation and development

#### 9.2.1 2030 Agenda on Sustainable Development

9.2.1.a Support the monitoring and implementation of Sustainable Development Goals (SDGs) by developing and integrating knowledge management tools and organising information on related policies, indicators, methods and data, facilitating the integration of social, economic and environmental information necessary to reach the SDG targets.

#### 9.2.2 Food and nutrition security, rural development and sustainable agriculture<sup>7</sup>

9.2.2.a Monitor food and nutrition security, agricultural and natural resources, support information systems, and carry out research activities while contributing to sustainable agriculture, nutrition and resilience in developing countries.

#### 9.2.3 Climate change, environment, natural resources, and water

9.2.3.a analysis, capacity building, provision of data, maps and methodologies on the extent, vulnerability to, and risk of current and future weather-driven disasters in developing countries, including guidance towards a more targeted allocation of climate finance, in particular in support of the Global Climate Change Alliance;

9.2.3.b monitoring, scientific advice, development of ICT tools, dissemination of information, and capacity building for partners in developing countries, to support related multilateral or bilateral agreements and cooperation initiatives, in particular in natural resource management through applied space technologies, and with a focus on forestry, biodiversity, ecosystem services, agriculture, climate change and water.

#### 9.2.4 Energy

9.2.4.a Map out and monitor activities, develop GIS (geographic information systems) tools, provide technical assistance, share best practice and build capacity in support of international, bilateral and regional energy cooperation initiatives, including on renewable energy.

9.2.5 Humanitarian-, development- and cooperation horizontal policies

9.2.5.a Develop methodologies, indicators and ICT tools, and carry out macroeconomic analyses of development issues in support of the Agenda for Change, policy coherence for development, and aid effectiveness and transparency, with a focus on measuring the impact of EU aid and cooperation on eradicating poverty.

9.3 Associated and neighbourhood countries

9.3.a Provide support to the Enlargement and H2020 Associated Countries to address, through scientific evidence, key national priorities, and promote their participation in Smart Specialisation exercises.

9.3.b Provide support for regional development policies through networking activities, capacity building and enhancing complementarity and integration with the macro-regional strategies.

10 A Union of democratic change

10.a A Union of democratic change

11 Cross-cutting activities

11.a Support innovation in EU policymaking through the development of generic tools and processes (i.e. anticipation, behavioural insights, design for policy, citizens' engagement, media monitoring, counterfactual evaluation, composite indicators and scoreboards).