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Proposal for a

**COUNCIL DECISION**

**on the adoption of the 2020-2023 high flux reactor supplementary research programme  
at Petten to be implemented by the Joint Research Centre for the European Atomic  
Energy Community**

## EXPLANATORY MEMORANDUM

### 1. CONTEXT OF THE PROPOSAL

- **Reasons for and objectives of the proposal**

The High Flux Reactor (hereafter: HFR) is a research installation based in Petten (the Netherlands) put at the disposal of the European Atomic Energy Community (Euratom), represented by the Commission, in accordance with an agreement concluded in 1961 with the Kingdom of the Netherlands for the duration of 99 years. Under this agreement, on behalf of the Community, the Commission has committed itself to build the necessary facilities and to provide additional equipment in order to make “optimum use” of these facilities (including the HFR). Since 1967 the operation of the reactor has been entrusted by the Commission-JRC to the Dutch operator Nuclear Research and consultancy Group – NRG under a co-operation contract based on the Site agreement of 1961.

The HFR ran as a Community Programme until 1971, when it was converted into a supplementary programme based on Article 7 of the Euratom Treaty, integrating Community programmes financed from the Community budget. Since then the HFR has been running under successive Supplementary Programmes with the participation of a variable configuration of Member States.

Through the supplementary research programme financed by two or more Member States the HFR provides a steady and reliable neutron flux for experimental purposes. The investigated domains under the supplementary programmes are: nuclear materials and fuel science, with the aim to improve the safety of nuclear reactors (both fission and fusion), investigations on reactor ageing and life management, research on advanced fuel cycles and waste management. The HFR acts also as a training facility hosting doctoral and post-doctoral fellows performing their research activities through national or European programmes.

The current Supplementary Programme was adopted on 29 May 2017, covering four years (2016-2019) (Council Decision 2017/956/Euratom - OJ L144/23, 7.6.2017). The Programme is implemented by the Joint Research Centre (JRC) for the European Atomic Energy Community. The contribution for the 2016-2019 Supplementary Research Programme came from two participating Member States, The Netherlands and France, with a total budget of EUR 30.2 million. This amount includes the provisions for the annual contributions to the decommissioning fund of the reactor. The current supplementary research programme will expire on the 31 December 2019.

The reactor is also used for the commercial production of radio-isotopes (under the responsibility of the operator), covering more than 60% of all the 10 million medical diagnoses performed each year in Europe. It is an indispensable source of supply for European radiopharmaceutical companies in this field. Moreover, thanks to its location, the production of the reactor is rapidly re-directed to the European medical centres. This is essential for the most currently used short-life isotopes.

This proposal for a Council Decision concerns a new four-year programme for the HFR operation (2020-2023) based on research activities of the Nuclear Research and consultancy Group – NRG (on behalf of The Netherlands) and the Commissariat à l'énergie atomique et aux énergies alternatives - CEA (on behalf of France). The contribution for the 2020-2023 supplementary research programme will be EUR 27.854 million in the four-year period, provided that the HFR will continue to be in regular operation and maintenance. This amount

will include the provisions for the annual contributions to the decommissioning fund of the reactor. If during the period 2020-2023, an official notification of definitive shutdown is issued by the operator NRG to the national safety authorities prior to the declaration of safe conservation state, the payments that remain to be effected as well as the calls for funds by the Commission will be suspended.

- **Consistency with existing policy provisions in the policy area**

In its meeting of 27 June 1996, the Council stated that the HFR can contribute, on the basis of adequate financing, to the execution of Community programmes, whether or not in the context of the Research Framework Programmes.

- **Consistency with other Union policies**

N.A.

## **2. LEGAL BASIS, SUBSIDIARITY AND PROPORTIONALITY**

- **Legal basis**

The proposal is based on Article 7 of the Euratom Treaty.

- **Subsidiarity (for non-exclusive competence)**

N.A.

- **Proportionality**

N.A.

- **Choice of the instrument**

N.A.

## **3. RESULTS OF EX-POST EVALUATIONS, STAKEHOLDER CONSULTATIONS AND IMPACT ASSESSMENTS**

- **Ex-post evaluations/fitness checks of existing legislation**

N.A.

- **Stakeholder consultations**

Among the Member States consulted in view of their research activities in the nuclear field, two Member States (The Netherlands and France) agreed to contribute to the financing of the HFR.

- **Collection and use of expertise**

N.A.

- **Impact assessment**

N.A.

- **Regulatory fitness and simplification**

N.A.

- **Fundamental rights**

N.A.

#### **4. BUDGETARY IMPLICATIONS**

In its financial statement, this new supplementary programme shows the contribution to come from two participating Member States, namely The Netherlands and France. The contributions from these two Member States amount to EUR 27.854 million for the period 2020-2023. These amounts plus the expected level of commercial income ensure a sufficient operational budget in order to balance the forecasted costs of the reactor on the period 2020-2023. It should be noted that the budget includes provisions for the decommissioning of the reactor, as well as costs linked to general support HFR, utilities, insurances and spent fuel management.

The Commission confirms the declaration recorded in the minutes of the Council meeting of 27 June 1996, by which it stated that "the HFR can contribute, on the basis of adequate financing, to the execution of Community programmes, whether or not in the context of the Framework Programmes. This participation will take place either on a competitive basis or by means of irradiation services to JRC Institutes during the implementation of their respective activities". This means that the Commission will not contribute to the operational cost of the HFR with funds from its institutional budget, including any cost for maintenance or repair of the reactor.

#### **5. OTHER ELEMENTS**

- **Implementation plans and monitoring, evaluation and reporting arrangements**

The Board of Governors of the Joint Research Centre shall be kept informed of the implementation of the programme. The Commission shall submit to the European Parliament and to the Council, a final report on the implementation of this Decision.

- **Explanatory documents (for directives)**

N.A.

- **Detailed explanation of the specific provisions of the proposal**

N.A.

Proposal for a

## COUNCIL DECISION

### **on the adoption of the 2020-2023 high flux reactor supplementary research programme at Petten to be implemented by the Joint Research Centre for the European Atomic Energy Community**

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Atomic Energy Community, and in particular Article 7 thereof,

Having regard to the proposal from the European Commission,

After consulting the Scientific and Technical Committee<sup>1</sup>,

Whereas:

- (1) The high flux reactor at Petten ('HFR') has been an important resource for the Community research on materials sciences and testing, nuclear medicine and reactor safety research in the field of nuclear energy.
- (2) The operation of the HFR has been supported by a series of supplementary research programmes. The last supplementary research programme, established under Council Decision (Euratom) 2017/956<sup>2</sup> for a four year term, will expire on 31 December 2019.
- (3) Considering its continued importance as an irreplaceable infrastructure for Community research in the fields of improvement of nuclear reactors safety, health (including the development of medical isotopes for medical research), nuclear fusion, fundamental research, training and waste management including the possibility to study the safety behaviour of nuclear fuels for reactor systems of interest to Europe, the HFR should continue to be supported by a supplementary research programme until the end of 2023.
- (4) Owing to their special interest in the irradiation capabilities of the HFR, the NRG: *Nuclear Research and consultancy Group V.O.F* and the CEA *Commissariat à l'énergie atomique et aux énergies alternatives*, as implementing agents for France and the Netherlands, respectively, have agreed to finance the entire 2020-2023 HFR supplementary research programme through contributions made to the general budget of the Union by way of assigned revenue.
- (5) Those contributions should finance the operation of the HFR in order to support a research programme and the regular operation and maintenance of the HFR. An

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<sup>1</sup> Minutes of the Scientific and Technical Committee Meeting held on 4 October 2019.

<sup>2</sup> Council Decision (Euratom) 2017/956 of 29 May 2017 on the adoption of the 2016-2019 high flux reactor supplementary research programme to be implemented by the Joint Research Centre for the European Atomic Energy Community (OJ L 144, 7.6.2017, p. 23).

official notification of definitive shutdown by the operator NRG to the to the Dutch national regulatory authority prior to the declaration of a safe conservation state should result in the suspension of payments that remain to be effected and any calls for funds by the Commission.

- (6) In order to ensure continuity between the supplementary research programmes and the smooth operation of the 2020-2023 HFR supplementary research programme, this Decision should apply from 1 January 2020.
- (7) The Board of Governors of the Joint Research Centre provided its prior opinion<sup>3</sup> pursuant to Article 4 of Commission Decision 96/282/Euratom<sup>4</sup>.

HAS ADOPTED THIS DECISION:

#### *Article 1*

The supplementary research programme on the operation of the High Flux Reactor at Petten ('HFR') ('the programme'), the objectives of which are set out in Annex I, shall be adopted for a period of four years, starting on 1 January 2020.

#### *Article 2*

The costs for the execution of the programme, estimated at EUR 27 854 000, shall be financed entirely out of contributions from France and the Netherlands, through the CEA and NRG, respectively. The breakdown of this amount is set out in Annex II. This contribution shall be considered as assigned revenue in accordance with Article 21(2) of Regulation (EU, Euratom) 2018/1046 of the European Parliament and of the Council<sup>5</sup>.

#### *Article 3*

1. The Commission shall be in charge of the management of the programme. To this end, it shall call upon the services of the Joint Research Centre.
2. The Commission shall keep the Board of Governors of the Joint Research Centre informed of the implementation of the programme.

#### *Article 4*

In the event that the NRG officially notifies the definitive shutdown of the HFR to the Dutch national regulatory authority (prior to the declaration of a safe conservation state), the obligations on the part of France and the Netherlands, through the CEA and NRG, respectively, to make further payments shall be suspended as shall any calls for funds by the Commission under this Decision.

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<sup>3</sup> Opinion of 18.12.2019.

<sup>4</sup> Commission Decision 96/282/Euratom of 10 April 1996 on the reorganization of the Joint Research Centre (OJ L 107 of 30.04.1996, p. 12).

<sup>5</sup> Regulation (EU, Euratom) 2018/1046 of the European Parliament and of the Council of 18 July 2018 on the financial rules applicable to the general budget of the Union, amending Regulations (EU) No 1296/2013, (EU) No 1301/2013, (EU) No 1303/2013, (EU) No 1304/2013, (EU) No 1309/2013, (EU) No 1316/2013, (EU) No 223/2014, (EU) No 283/2014, and Decision No 541/2014/EU and repealing Regulation (EU, Euratom) No 966/2012 (OJ L 193, 30.07.2018, p. 1).

*Article 5*

The Commission shall submit a final report on the implementation of this Decision to the European Parliament and to the Council after the end of the 2020-2023 HFR supplementary research programme.

*Article 6*

This Decision shall enter into force on the day following that of its publication in the *Official Journal of the European Union*.

It shall apply from 1 January 2020.

Done at Brussels,

*For the Council  
The President*

## LEGISLATIVE FINANCIAL STATEMENT

### 1. FRAMEWORK OF THE PROPOSAL/INITIATIVE

#### 1.1. Title of the proposal/initiative

The 2020-2023 High Flux Reactor supplementary research programme to be implemented by the Joint Research Centre for the European Atomic Energy Community

#### 1.2. Policy area(s) concerned

Title 10: Direct Research Activity  
Chapter 10 04: Other activities of the Joint Research Centre  
Article 10 04 04: Operation of the high-flux reactor (HFR)

#### 1.3. The proposal/initiative relates to:

- a new action  
 a new action following a pilot project/preparatory action<sup>6</sup>  
 the extension of an existing action  
 a merger or redirection of one or more actions towards another/a new action

#### 1.4. Objective(s)

##### 1.4.1. General objective(s)

The High-Flux-Reactor (HFR) plays an important role in the European Union in support to medical radioisotope production, in the research fields related to the safety of nuclear plants ageing and life extension, improvement of the fuel safety, safe nuclear waste management as well as training.

Moreover, fundamental research makes use of neutron beams for the study of the structure of materials. This activity is under permanent development and contributes to the understanding of degradation mechanisms and their mitigation relevant to the safety of existing plants. In the framework of thermonuclear fusion, several projects are implemented to test structural and breeding materials for future fusion reactors.

##### 1.4.2. Specific objective(s)

###### Specific objective No

The main objective of the HFR Supplementary Programme is the safe and reliable operation of the HFR. This activity involves the normal use of the installation for a maximum operational period, and the delivery of a neutron flux for experiments and medical isotope production.

<sup>6</sup> As referred to in Article 58(2)(a) or (b) of the Financial Regulation.



### 1.4.3. *Expected result(s) and impact*

*Specify the effects which the proposal/initiative should have on the beneficiaries/groups targeted.*

Irradiation data and experimental results in a broad range of disciplines such as: safety of nuclear reactors, the development and production of radio-isotopes for medical use and research, research on fusion reactor materials, fundamental nuclear research and training, waste management issues and nuclear fuels for new safer generation of reactor systems.

### 1.4.4. *Indicators of performance*

*Specify the indicators for monitoring progress and achievements.*

The obligations of the Commission consist in managing the supplementary research programme and consequently in reporting on the technical status of the reactor operation, its scientific use, and its budgetary situation. A final report will be prepared by JRC and will cover the following items:

- technical reporting providing the HFR operational data;
- summary description of the main scientific achievements;
- status of the maintenance and repair activities;
- budgetary status as far as the income from Member States and the use of the supplementary research programme budget is concerned (including provisions for decommissioning, management costs, payment to the operator, etc.).

## 1.5. **Grounds for the proposal/initiative**

### 1.5.1. *Requirement(s) to be met in the short or long term including a detailed timeline for roll-out of the implementation of the initiative*

The HFR aims to support research and development activities of the participant Member States in the fields of: safety of nuclear installations and fuel cycle, waste management, thermonuclear fusion, fundamental research and training capabilities.

The HFR remains active in improving safety of reactors. The co-ordination of efforts, dissemination of results and support to harmonisation are carried out through European networks.

The HFR also aims to provide medical radioisotopes

### 1.5.2. *Added value of Union involvement (it may result from different factors, e.g. coordination gains, legal certainty, greater effectiveness or complementarities). For the purposes of this point 'added value of Union involvement' is the value resulting from Union intervention which is additional to the value that would have been otherwise created by Member States alone.*

The added value of HFR research activities is linked to cross border effects, economies of scale, contributing to the reduction of national investments in research.

The reactor is also used for the commercial production of radio-isotopes for more than 60% of the 10 million medical diagnoses executed each year in Europe. It is a very important facility for the European Medical Sector (hospitals, clinics, doctors...) as the radio-isotopes are used in various medical fields but mostly for the

diagnosis, prevention and treatment of cancer. There are very few alternatives, as it produces the most currently used short-life isotopes. Through its location in Europe, the production of the reactor is rapidly directed to the European medical centres.

Intervention at European level is also justified due to the limited number of nuclear research reactors available in the EU.

*1.5.3. Lessons learned from similar experiences in the past*

The current Technetium (Tc-99m) supply for medical purposes relies on an unsustainably low number of production reactors among which the HFR. As those reactors were constructed in the 1950s and 1960s, they are approaching the end of their lifespan, which causes an increasing need for planned maintenance shutdowns and a growing frequency of unplanned production interruptions. In mid-May 2009, the Canadian NRU Reactor (a medical isotope producer) went out of operation and remained unavailable for the rest of 2009, triggering a continuous worldwide medical isotope shortage. In 2010, the HFR was shutdown for a repair to the Bottom Plug Liner. In 2015, the French Osiris research reactor was definitely shutdown. These events disrupted the supply of medical isotopes.

*1.5.4. Compatibility with the Multiannual Financial Framework and possible synergies with other appropriate instruments*

The proposed Supplementary Research Programme will address different scientific and technological challenges related to safety of nuclear technologies. It will have activities closely linked to the extension (2019-2020) of Horizon 2020 Euratom Research and Training Programme as well as the new Horizon Europe Euratom Research and Training Programme (2021-2025).

The eventual decommissioning of the HFR, as a nuclear research installation of the JRC is currently addressed in the Commission proposal for a Council Regulation of the Decommissioning of Nuclear Facilities and Management of Radioactive Waste for the period 2021-2027. The Supplementary Programme deals exclusively with the safe operation of the reactor, and does not impact and is not impacted neither in scope nor in budget by the aforementioned proposed Council Regulation.

*1.5.5. Assessment of the different available financing options, including scope for redeployment*

Not applicable

## 1.6. Duration and financial impact of the proposal/initiative

- limited duration
- in effect from 01/01/2020 to 31/12/2023
- Financial impact from 2020 to 2023 for commitment appropriations and from 2020 to 2024 for payment appropriations.
- unlimited duration

Implementation with a start-up period from YYYY to YYYY, followed by full-scale operation.

## 1.7. Management mode(s) planned<sup>7</sup>

- Direct management by the Commission
- by its departments, including by its staff in the Union delegations;
- by the executive agencies
- Shared management with the Member States
- Indirect management by entrusting budget implementation tasks to:
  - third countries or the bodies they have designated;
  - international organisations and their agencies (to be specified);
  - the EIB and the European Investment Fund;
  - bodies referred to in Articles 70 and 71 of the Financial Regulation;
  - public law bodies;
  - bodies governed by private law with a public service mission to the extent that they provide adequate financial guarantees;
  - bodies governed by the private law of a Member State that are entrusted with the implementation of a public-private partnership and that provide adequate financial guarantees;
  - persons entrusted with the implementation of specific actions in the CFSP pursuant to Title V of the TEU, and identified in the relevant basic act.

*If more than one management mode is indicated, please provide details in the 'Comments' section.*

### Comments

The Commission is the owner of the HFR in accordance with the agreement between Euratom and The Netherlands of 25 July 1961 (lease of 99 years). The operation of the HFR lies under the responsibility of the operation licence holder NRG (NL) which allows an operation/exploitation based on an independent and sustainable legal regime. The supplementary research programme, managed by the JRC, provides extra income dedicated to research for the financing Member States.

<sup>7</sup> Details of management modes and references to the Financial Regulation may be found on the BudgWeb site:  
<https://myintracomm.ec.europa.eu/budgweb/EN/man/budgmanag/Pages/budgmanag.aspx>

## 2. MANAGEMENT MEASURES

### 2.1. Monitoring and reporting rules

*Specify frequency and conditions.*

The obligations of the Commission consist in managing the supplementary research programme and consequently in reporting yearly on:

- (i) the technical status of the reactor operation,
- (ii) its scientific use,
- (iii) its budgetary situation as regard the financial income from Member States and
- (iv) the payments made.

The programme is included in the planning cycle of the JRC and in the Annual Management Plan. As a consequence the monitoring of stated objectives will be included in the JRC Annual Activity Report.

In addition an final report will be prepared by JRC. It will be dedicated to the management of the supplementary research programme, and will cover the following items:

- technical reporting providing the HFR operational data;
- summary description of the main scientific achievements;
- status of the maintenance activities;
- budgetary status as far as the income from Member States and the use of the supplementary research programme budget is concerned (including provisions for decommissioning, management costs, etc.).

### 2.2. Management and control system(s)

#### 2.2.1. *Justification of the management mode(s), the funding implementation mechanism(s), the payment modalities and the control strategy proposed*

This program is the continuation of a previous supplementary research programme. The preparation of it was the subject of an internal assessment by the participant Member States who evaluated the risks to participate in it.

#### 2.2.2. *Information concerning the risks identified and the internal control system(s) set up to mitigate them*

The reporting will be dedicated to the management of the supplementary research programme, and will cover the technical, scientific and budgetary issues (including provisions for decommissioning, etc.).

#### 2.2.3. *Estimation and justification of the cost-effectiveness of the controls (ratio of "control costs ÷ value of the related funds managed"), and assessment of the expected levels of risk of error (at payment & at closure)*

Not applicable

### 2.3. Measures to prevent fraud and irregularities

*Specify existing or envisaged prevention and protection measures, e.g. from the Anti-Fraud Strategy.*

Audit and internal control of the reporting mentioned above are carried out by JRC officers, covering both the technical and budgetary aspects.

The legislation will ensure that audits and on-the-spot checks can be carried out by the Commission services, including OLAF, using the standard provisions recommended by OLAF.

The JRC Anti-Fraud Strategy has been updated in December 2017 in order to contribute to the update of the Commission Anti-Fraud Strategy to take into account the latest OLAF methodology.

Control of the circulation of fissile materials is covered by Euratom and the IAEA.

### 3. ESTIMATED FINANCIAL IMPACT OF THE PROPOSAL/INITIATIVE

#### 3.1. Heading(s) of the multiannual financial framework and expenditure budget line(s) affected

Existing budget lines

*In order of multiannual financial framework headings and budget lines.*

Heading of multiannual financial framework	Budget line	Type of expenditure	Contribution			
	Number	Diff./Non-diff. <sup>8</sup>	from EFTA countries <sup>9</sup>	from candidate countries <sup>10</sup>	from third countries	within the meaning of Article 21(2)(b) of the Financial Regulation
1a	Article 10 04 04 - Operation of the high-flux reactor (HFR)					
	Item 10 04 04 01 - Operation of the high-flux reactor (HFR) - Supplementary HFR programme	DA	NO	NO	NO	YES

New budget lines requested not applicable

*In order of multiannual financial framework headings and budget lines.*

Heading of multiannual financial framework	Budget line	Type of expenditure	Contribution			
	Number	Diff./Non-diff.	from EFTA countries	from candidate countries	from third countries	within the meaning of Article 21(2)(b) of the Financial Regulation
	[XX.YY.YY.YY]		YES/NO	YES/NO	YES/NO	YES/NO

<sup>8</sup> Diff. = Differentiated appropriations / Non-diff. = Non-differentiated appropriations.

<sup>9</sup> EFTA: European Free Trade Association.

<sup>10</sup> Candidate countries and, where applicable, potential candidates from the Western Balkans.

### 3.2. Estimated financial impact of the proposal on appropriations

#### 3.2.1. Summary of estimated impact on operational appropriations

- The proposal/initiative does not require the use of operational appropriations
- The proposal/initiative requires the use of operational appropriations, as explained below:

EUR million (to three decimal places)

<b>Heading of multiannual financial framework</b>	1a	Competitiveness for Growth and Jobs
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DG: JRC			Year 2020 <sup>11</sup>	Year 2021	Year 2022	Year 2023	Year >-2023	TOTAL
• Operational appropriations								
Budget line <sup>12</sup> 10 04 04 01	Commitments	(1a)	p.m.	p.m.	p.m.	p.m.		<b>p.m.</b>
	Payments	(2a)	p.m.	p.m.	p.m.	p.m.	p.m.	<b>p.m.</b>
Appropriations of an administrative nature financed from the envelope of specific programmes <sup>13</sup>								
Budget line		(3)	p.m.	p.m.	p.m.	p.m.		<b>p.m.</b>
<b>TOTAL appropriations for DG JRC</b>	Commitments	=1a+1b +3	p.m.	p.m.	p.m.	p.m.	.	<b>p.m.</b>
	Payments	=2a+2b +3	p.m.	p.m.	p.m.	p.m.	p.m.	<b>p.m.</b>

<sup>11</sup> Year N is the year in which implementation of the proposal/initiative starts. Please replace "N" by the expected first year of implementation (for instance: 2021). The same for the following years.

<sup>12</sup> According to the official budget nomenclature for 2020, for the years 2021-2023 to be specified with the nomenclature for the MFF 2021-2027

<sup>13</sup> Technical and/or administrative assistance and expenditure in support of the implementation of EU programmes and/or actions (former 'BA' lines), indirect research, direct research.

• TOTAL operational appropriations	Commitments	(4)	p.m.	p.m.	p.m.	p.m.		<b>p.m.</b>
	Payments	(5)	p.m.	p.m.	p.m.	p.m.	p.m.	<b>p.m.</b>
• TOTAL appropriations of an administrative nature financed from the envelope for specific programmes		(6)	p.m.	p.m.	p.m.	p.m.		<b>p.m.</b>
<b>TOTAL appropriations under HEADING 1a</b> of the multiannual financial framework	Commitments	=4+ 6	p.m.	p.m.	p.m.	p.m.		<b>p.m.</b>
	Payments	=5+ 6	p.m.	p.m.	p.m.	p.m.	p.m.	<b>p.m.</b>

**If more than one operational heading is affected by the proposal / initiative, repeat the section above: n/a**

• TOTAL operational appropriations (all operational headings)	Commitments	(4)							
	Payments	(5)							
TOTAL appropriations of an administrative nature financed from the envelope for specific programmes (all operational headings)		(6)							
<b>TOTAL appropriations under HEADINGS 1 to 4</b> of the multiannual financial framework (Reference amount)	Commitments	=4+ 6							
	Payments	=5+ 6							



<b>Heading of multiannual financial framework</b>	<b>5</b>	‘Administrative expenditure’
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This section should be filled in using the 'budget data of an administrative nature' to be firstly introduced in the [Annex to the Legislative Financial Statement](#) (Annex V to the internal rules), which is uploaded to DECIDE for interservice consultation purposes.

EUR million (to three decimal places)

		Year N	Year N+1	Year N+2	Year N+3	Enter as many years as necessary to show the duration of the impact (see point 1.6)			TOTAL
DG: <.....>									
• Human resources		n/a	n/a	n/a	n/a				n/a
• Other administrative expenditure		n/a	n/a	n/a	n/a				n/a
<b>TOTAL DG &lt;.....&gt;</b>		n/a	n/a	n/a	n/a				n/a
		Appropriations							

<b>TOTAL appropriations under HEADING 5 of the multiannual financial framework</b>	(Total commitments = Total payments)	n/a	n/a	n/a	n/a				n/a
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EUR million (to three decimal places)

		Year N <sup>14</sup>	Year N+1	Year N+2	Year N+3	Enter as many years as necessary to show the duration of the impact (see point 1.6)			TOTAL
<b>TOTAL appropriations</b>	Commitments	p.m.	p.m.	p.m.	p.m.				p.m.

<sup>14</sup> Year N is the year in which implementation of the proposal/initiative starts. Please replace "N" by the expected first year of implementation (for instance: 2021). The same for the following years.

<b>under HEADINGS 1 to 5</b> of the multiannual financial framework	Payments	p.m.	p.m.	p.m.	p.m.					p.m.
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3.2.2. *Estimated output funded with operational appropriations*

Commitment appropriations in EUR million (to three decimal places)

Indicate objectives and outputs  ↓			Year 2020		Year 2021		Year 2022		Year 2023		TOTAL	
	OUTPUTS											
	Type <sup>15</sup>	Average cost	No	Cost	No	Cost	No	Cost	No	Cost	Total No	Total cost
SPECIFIC OBJECTIVE No 1 <sup>16</sup> ...			Safe and reliable operation of the HFR									
- Output	Full-power operation days	n/a	250	p.m.	250	p.m.	250	p.m.	250	p.m.	1 000	p.m.
Subtotal for specific objective No 1			250	p.m.	250	p.m.	250	p.m.	250	p.m.	1 000	p.m.
<b>TOTALS</b>			250	p.m.	250	p.m.	250	p.m.	250	p.m.	1 000	p.m.

<sup>15</sup> Outputs are products and services to be supplied (e.g.: number of student exchanges financed, number of km of roads built, etc.).

<sup>16</sup> As described in point 1.4.2. 'Specific objective(s)...'

### 3.2.3. Summary of estimated impact on administrative appropriations

The proposal/initiative does not require the use of appropriations of an administrative nature

The proposal/initiative requires the use of appropriations of an administrative nature, as explained below:

EUR million (to three decimal places)

	Year N <sup>17</sup>	Year N+1	Year N+2	Year N+3	Enter as many years as necessary to show the duration of the impact (see point 1.6)	TOTAL
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<b>HEADING 5 of the multiannual financial framework</b>							
Human resources							
Other administrative expenditure							
<b>Subtotal HEADING 5 of the multiannual financial framework</b>							

<b>Outside HEADING 5<sup>18</sup> of the multiannual financial framework</b>							
Human resources							
Other expenditure of an administrative nature							
<b>Subtotal outside HEADING 5 of the multiannual financial framework</b>							

<b>TOTAL</b>							
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The appropriations required for human resources and other expenditure of an administrative nature will be met by appropriations from the DG that are already assigned to management of the action and/or have been redeployed within the DG, together if necessary with any additional allocation which may be granted to the managing DG under the annual allocation procedure and in the light of budgetary constraints.

<sup>17</sup> Year N is the year in which implementation of the proposal/initiative starts. Please replace "N" by the expected first year of implementation (for instance: 2021). The same for the following years.

<sup>18</sup> Technical and/or administrative assistance and expenditure in support of the implementation of EU programmes and/or actions (former 'BA' lines), indirect research, direct research.

### 3.2.3.1. Estimated requirements of human resources

- The proposal/initiative does not require the use of human resources.
- The proposal/initiative requires the use of human resources, as explained below:

*Estimate to be expressed in full time equivalent units*

	Year N	Year N+1	Year N+2	Year N+3	Enter as many years as necessary to show the duration of the impact (see point 1.6)		
<b>• Establishment plan posts (officials and temporary staff)</b>							
XX 01 01 01 (Headquarters and Commission's Representation Offices)							
XX 01 01 02 (Delegations)							
XX 01 05 01/11/21 (Indirect research)							
10 01 05 01/11 (Direct research)							
<b>• External staff (in Full Time Equivalent unit: FTE)<sup>19</sup></b>							
XX 01 02 01 (AC, END, INT from the 'global envelope')							
XX 01 02 02 (AC, AL, END, INT and JPD in the delegations)							
XX 01 04 yy <sup>20</sup>	- at Headquarters						
	- in Delegations						
XX 01 05 02/12/22 (AC, END, INT - Indirect research)							
10 01 05 02/12 (AC, END, INT - Direct research)							
Other budget lines (specify)							
<b>TOTAL</b>							

**XX** is the policy area or budget title concerned.

The human resources required will be met by staff from the DG who are already assigned to management of the action and/or have been redeployed within the DG, together if necessary with any additional allocation which may be granted to the managing DG under the annual allocation procedure and in the light of budgetary constraints.

Description of tasks to be carried out:

Officials and temporary staff	The only task performed by the JRC is the management of the Supplementary Programme. This is performed by means that are fully financed by assigned revenue coming from the Supplementary Research Programme
External staff	Not applicable

<sup>19</sup> AC= Contract Staff; AL = Local Staff; END= Seconded National Expert; INT = agency staff; JPD= Junior Professionals in Delegations.

<sup>20</sup> Sub-ceiling for external staff covered by operational appropriations (former 'BA' lines).

3.2.4. *Compatibility with the current multiannual financial framework*

The proposal/initiative:

- can be fully financed through redeployment within the relevant heading of the Multiannual Financial Framework (MFF).
- requires use of the unallocated margin under the relevant heading of the MFF and/or use of the special instruments as defined in the MFF Regulation.
- requires a revision of the MFF.

3.2.5. *Third-party contributions*

The proposal/initiative:

- does not provide for co-financing by third parties
- provides for the co-financing by third parties estimated below:

Appropriations in EUR million (to three decimal places)

	Year 2020	Year 2021	Year 2022	Year 2023	Enter as many years as necessary to show the duration of the impact (see point 1.6)			Total
The Netherlands	7 451	6 401	6 401	6 401				26 654
France	300	300	300	300				1 200
TOTAL appropriations co-financed	7 751	6 701	6 701	6 701				27 854

Estimated impact on revenue

The proposal/initiative has no financial impact on revenue.

The proposal/initiative has the following financial impact:

on own resources

on other revenue

please indicate, if the revenue is assigned to expenditure lines

EUR million (to three decimal places)

Budget revenue line:	Appropriations available for the current financial year	Impact of the proposal/initiative <sup>21</sup>			
		Year 2020	Year 2021	Year 2022	Year 2023
Item 6221		p.m.	p.m.	p.m.	p.m.

Item 6 2 2 1

Revenue from the operation of the high-flux reactor (HFR) — Assigned revenue

Other remarks (e.g. method/formula used for calculating the impact on revenue or any other information).

The supplementary research programme is financed by contributions coming from the participant Member States, calculated on the basis of the budget in the period 2016-2019.

<sup>21</sup>

As regards traditional own resources (customs duties, sugar levies), the amounts indicated must be net amounts, i.e. gross amounts after deduction of 20 % for collection costs.