


# Procedure file

Basic information	
NLE - Non-legislative enactments Regulation	2011/0363(NLE) Procedure completed
Nuclear decommissioning assistance programmes in Bulgaria, Lithuania and Slovakia 2014-2020	
Repealing Regulation (Euratom) No 549/2007 <a href="#">2004/0221(CNS)</a> Repealing Regulation (Euratom) No 647/2010 <a href="#">2009/0172(NLE)</a> Repealed by <a href="#">2018/0252(NLE)</a>	
Subject 3.60.04 Nuclear energy, industry and safety	
Geographical area Lithuania Bulgaria Slovakia	

Key players			
European Parliament	Committee responsible	Rapporteur	Appointed
	<b>ITRE</b> Industry, Research and Energy		14/03/2012
		ECR <a href="#">CHICHESTER Giles</a>	
		Shadow rapporteur	
		PPE <a href="#">VIDAL-QUADRAS Alejo</a>	
		S&D <a href="#">KALFIN Ivailo</a>	
		ALDE <a href="#">PANAYOTOV Vladko Todorov</a>	
	Verts/ALE <a href="#">HARMS Rebecca</a>		
	EFD <a href="#">PAKSAS Rolandas</a>		
	Committee for opinion	Rapporteur for opinion	Appointed
	<b>BUDG</b> Budgets		06/02/2012
		ALDE <a href="#">TORVALDS Nils</a>	
	Committee for opinion on the legal basis	Rapporteur for opinion	Appointed
	<b>JURI</b> <a href="#">Legal Affairs</a>		09/01/2013
		EFD <a href="#">SPERONI Francesco Enrico</a>	
Council of the European Union	Council configuration	Meeting	Date
	<a href="#">Environment</a>	<a href="#">3284</a>	13/12/2013
European Commission	Commission DG	Commissioner	
	<a href="#">Energy</a>	OETTINGER Günther	

Key events			
24/11/2011	Legislative proposal published	<a href="#">COM(2011)0783</a>	Summary
17/01/2012	Committee referral announced in Parliament		
19/03/2013	Vote in committee		

29/04/2013	Committee report tabled for plenary, 1st reading/single reading	<a href="#">A7-0119/2013</a>	Summary
19/11/2013	Results of vote in Parliament		
19/11/2013	Decision by Parliament	<a href="#">T7-0471/2013</a>	Summary
12/12/2013	End of procedure in Parliament		
13/12/2013	Act adopted by Council after consultation of Parliament		
20/12/2013	Final act published in Official Journal		

## Technical information

Procedure reference	2011/0363(NLE)
Procedure type	NLE - Non-legislative enactments
Procedure subtype	Consultation of Parliament
Legislative instrument	Regulation
	Repealing Regulation (Euratom) No 549/2007 <a href="#">2004/0221(CNS)</a> Repealing Regulation (Euratom) No 647/2010 <a href="#">2009/0172(NLE)</a> Repealed by <a href="#">2018/0252(NLE)</a>
Legal basis	Treaty on the Functioning of the EU TFEU 168-p4; Treaty on the Functioning of the EU TFEU 114; Euratom Treaty A 203
Other legal basis	Rules of Procedure EP 159
Stage reached in procedure	Procedure completed
Committee dossier	ITRE/7/07871

## Documentation gateway

Legislative proposal		<a href="#">COM(2011)0783</a>	24/11/2011	EC	Summary
Document attached to the procedure		<a href="#">SEC(2011)1387</a>	24/11/2011	EC	
Document attached to the procedure		<a href="#">SEC(2011)1388</a>	24/11/2011	EC	
Committee draft report		<a href="#">PE491.251</a>	16/07/2012	EP	
Amendments tabled in committee		<a href="#">PE496.524</a>	04/10/2012	EP	
Committee opinion	<b>BUDG</b>	<a href="#">PE498.148</a>	19/12/2012	EP	
Specific opinion	<b>JURI</b>	<a href="#">PE506.048</a>	25/02/2013	EP	
Committee report tabled for plenary, 1st reading/single reading		<a href="#">A7-0119/2013</a>	29/04/2013	EP	Summary
Text adopted by Parliament, 1st reading/single reading		<a href="#">T7-0471/2013</a>	19/11/2013	EP	Summary
Commission response to text adopted in plenary		<a href="#">SP(2014)87</a>	30/01/2014	EC	
Follow-up document		<a href="#">COM(2015)0078</a>	03/03/2015	EC	Summary
Follow-up document		<a href="#">COM(2016)0405</a>	20/06/2016	EC	Summary
Follow-up document		<a href="#">COM(2017)0328</a>	20/06/2017	EC	Summary

Follow-up document		<a href="#">COM(2018)0468</a>	13/06/2018	EC	Summary
Follow-up document		SWD(2018)0344	13/06/2018	EC	
Follow-up document		<a href="#">COM(2019)0215</a>	03/05/2019	EC	Summary
Follow-up document		<a href="#">COM(2020)0082</a>	17/03/2020	EC	Summary
Follow-up document		<a href="#">COM(2021)0235</a>	18/05/2021	EC	

#### Additional information

National parliaments	<a href="#">IPEX</a>
European Commission	<a href="#">EUR-Lex</a>

#### Final act

[Regulation 2013/1368](#)

[OJ L 346 20.12.2013, p. 0001](#) Summary

[Corrigendum to final act 32013R1368R\(01\)](#)

[OJ L 008 11.01.2014, p. 0031](#) Summary

## Nuclear decommissioning assistance programmes in Bulgaria, Lithuania and Slovakia 2014-2020

**PURPOSE:** to provide EU support for nuclear decommissioning assistance programmes in Bulgaria, Lithuania and Slovakia.

**PROPOSED ACT:** Council Regulation.

**BACKGROUND:** in the context of their EU accession negotiations, Bulgaria, Lithuania and Slovakia made the commitment to close and subsequently decommission respectively the nuclear reactors Kozloduy units 1 to 4, Ignalina units 1 and 2 and Bohunice V1 units 1 and 2 by a commonly agreed date. This early closure represented an exceptional financial burden for the Member States concerned which was not commensurate with their economic strength.

In recognition of this fact and as an act of solidarity the European Union committed itself to continue to provide additional financial assistance for the decommissioning of these reactors, respectively the Kozloduy, Ignalina and Bohunice Programmes. The closure commitment of the three Member States as well as the commitment of the European Union to provide financial support was foreseen in the corresponding Accession Treaties.

The total financial assistance from the European Union to the three Member States until the end of 2013 foresees EUR 2 847,8 million (EUR 1 367 million for Lithuania, EUR 613 million for Slovakia and EUR 867,8 million for Bulgaria). Following the closure of all the nuclear power plants concerned, all the beneficiary countries committed to proceed with the implementation of their decommissioning plan and the first dismantling works of non-active facilities have started.

However, the updated decommissioning planning and decommissioning cost estimates provided by the Member States in early 2011 provide clear evidence that substantial additional financial resources will be required to complete decommissioning of the Kozloduy, Ignalina and Bohunice nuclear power plants in a safe manner. The three Member States do not have the required financial resources to ensure a seamless continuation and completion of safe decommissioning.

This is why the Commission is proposing the extension of financial support from the Union with the general objective of reaching an irreversible state within the decommissioning process of Kozloduy units 1 to 4, Ignalina units 1 and 2 and Bohunice V1 units 1 and 2 nuclear power plants, in accordance with their respective decommissioning plans, while keeping the highest level of safety.

**IMPACT ASSESSMENT:** the proposed Regulation has been the subject of an impact assessment concerning three possible policy options:

- the baseline option that would consist in no further Union support beyond 2013;
- the business as usual option with Union support for decommissioning and measures in the energy sector that are consequential to the closure of the nuclear reactor units;
- further, but reduced Union support dedicated to decommissioning only.

No further Union support under the baseline option would stop the decommissioning programmes and consequently jeopardize nuclear safety. The business as usual option would result in a much higher financial Union support with reduced added value. Further support to projects in the energy sector would lead to a distortion of competition and the continuing high level of financial Union support would not be a sufficient incentive for the Member States to take over the full financial responsibility for the completion of decommissioning.

The assessment of the impacts of the three options resulted in the conclusion that only the third option would allow the seamless continuation of decommissioning to reach an irreversible state within the decommissioning process, while at the same time supporting the transition towards full Member State funding of the safe completion of decommissioning.

**LEGAL BASIS:** Article 203 of the Euratom Treaty.

**CONTENT:** this proposal for a Council Regulation foresees an extension of financial support from the Union with the general objective to reach

an irreversible state within the decommissioning process of Kozloduy units 1 to 4, Ignalina units 1 and 2 and Bohunice V1 units 1 and 2 nuclear power plants.

Objectives for each of the nuclear plants: the specific objectives for the Kozloduy, Ignalina and Bohunice Programmes are:

Kozloduy Programme:

- performing dismantling in the turbine halls of units 1 to 4 and in auxiliary buildings;
- dismantling of large components and equipments in the reactor buildings of units 1 to 4
- safely managing the decommissioning waste in accordance with a detailed waste management plan.

Ignalina Programme:

- defueling of the reactor core of unit 2 and the unit 1 and 2 reactor fuel ponds into the dry spent fuel storage facility;
- safely maintaining the reactor units until defueling is completed;
- performing dismantling in the turbine hall and other auxiliary buildings and safely managing the decommissioning.

Bohunice Programme:

- performing dismantling in the turbine hall and auxiliary buildings of reactor V1;
- dismantling of large components and equipments in the V1 reactor buildings;
- safely managing the decommissioning waste in accordance with a detailed waste management plan.

To meet the above presented general objective, specific objectives with their respective indicators are defined for the Kozloduy, Ignalina and Bohunice Programmes.

Conditions for the granting of funds: the proposed Regulation establishes ex ante conditionalities that Bulgaria, Lithuania and Slovakia should satisfy before the Programme's funds are disbursed:

- compliance with Unions acquis; in particular in the area of nuclear safety the transposition into national law of the [Council Directive 2009/71/Euratom](#) on nuclear safety and the [Council Directive 2011/70/Euratom](#) on the management of spent fuel and radioactive waste;
- establishment of a national legal framework to provide adequate provisions for the timely accumulation of national financial resources for the safe completion of decommissioning;
- submission to the Commission of a revised detailed decommissioning plan.

The financial support of the Union should be linked and subject to the achievement of the expected results. Consequently, the proposed Regulation foresees the possibility to review the amount of the appropriations allocated to the Programme, as well as the distribution amongst the Kozloduy, Ignalina and Bohunice Programmes, in the light of the outcome of an evaluation addressing the progress achieved in decommissioning.

Co-funding by the Member States concerned: it is expected from the three Member States that they are ready to provide the required additional financing to cover the remaining financial needs in order to ensure efficient and effective use of the additional Union support as well as to ensure the transition towards full Member State funding for the completion of safe decommissioning.

Based on the current cost estimations for decommissioning, this means in the order of:

- EUR 668 million for Bulgaria,
- EUR 1140 million for Lithuania and
- EUR 321 million for Slovakia.

New commitment appropriations will be entered into the EU budget until the end of 2017 for the Bohunice and Ignalina Programme and until the end of 2020 for the Kozloduy Programme. However, on the basis of these commitments appropriations, payment appropriations will continue for several more years, most likely at least until 2021 for Bohunice and Ignalina and until 2024 for Kozloduy.

Implementation and work programme: the Commission will adopt annual financial commitments through one joint annual work programme for the Kozloduy, Ignalina and Bohunice Programmes. An act setting out implementation procedures should define more operational details for the implementation of the financial Union support, inter alia detailed reporting and monitoring requirements. This act should further contain the revised decommissioning plans for the Kozloduy, Ignalina and Bohunice Programmes that would serve as baseline for the monitoring of the progress and the timely achievement of the expected results. This would also allow potential difficulties arising in the course of the implementation of project to be addressed more efficiently and effectively.

The current proposal foresees several simplifications: a single Council Regulation is foreseen for the financial Union support to Bulgaria, Lithuania and Slovakia under the 2014-2020 Multiannual Financial Framework, instead of previously three separate and independent Regulations. This Regulation does not foresee any exceptions to the Financial Regulation.

Reports and review: a comprehensive review in the framework of an interim evaluation is scheduled for 2015. This will cover the efficiency of the use of resources and the results obtained.

BUDGETARY IMPACT: the programme shall cover the period 2014-2020. The overall budgetary envelope is EUR 552 947 000 at current prices. This amount is in line with the Commission proposal for the next Multi-Annual financial framework for the period 2014-2020: ["A Budget for Europe 2020"](#).

That amount shall be distributed among the Kozloduy, Ignalina and Bohunice Programmes as follows:

- EUR 208 503 000 for the Kozloduy Programme for the period 2014 to 2020;
- EUR 229 629 000 for the Ignalina Programme for the period 2014 to 2017;
- EUR 114 815 000 for the Bohunice Programme for the period 2014 to 2017.

The split of the overall amount amongst the three individual programmes takes into account that Bulgaria has to decommission 4 units, Slovakia 2 units and Lithuania 2 units, for which no decommissioning experience is available and type and quantity of materials to be managed are of a different order of magnitude. The duration for the support is based on the principle of equal treatment since accession.

## Nuclear decommissioning assistance programmes in Bulgaria, Lithuania and Slovakia 2014-2020

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The Committee on Industry, Research and Energy adopted the report by Giles CHICHESTER (ECR, UK) on the proposal for a Council Regulation on Union support for the nuclear decommissioning assistance programmes in Bulgaria, Lithuania and Slovakia.

The Committee makes the following amendments to the Commission proposal:

**Definition of decommissioning:** Members specify that the definition of 'decommissioning' is derived from the one found in the [ECA Special Report n°16/2011](#). Decommissioning covers preparatory activities prior to the final and all the activities taking place after the reactors are shut down: (i) the removal and the final disposal of spent fuel elements, (ii) decontamination, (iii) dismantling and/or demolition of the nuclear installations, (iv) the disposal of remaining radioactive waste materials and (v) the environmental restoration of the contaminated site. The decommissioning process ends when the installation is released from any regulatory control and radiological restriction.

**Objectives:** the general objective of the Programme is to assist the Member States concerned to implement steady process towards the irreversible decommissioning end state of nuclear power plants named in the regulation, in accordance with Union law on nuclear safety.

Members stress the need to safely manage the long term storage and disposal of decommissioning waste in accordance with a detailed national waste management plan, to be measured by the quantity and type of stored and disposed of waste. They state that the effective control of the evolution of the decommissioning process should be based on the establishment of meaningful qualitative and quantitative performance indicators, which can be easily monitored and reported on as necessary.

Any of the decommissioning programmes may also include measures to maintain the requisite high level of shutdown safety at the nuclear power plants.

**Budget:** annual appropriations shall be authorised by the budgetary authority without prejudice to the provisions of the Regulation laying down the multiannual financial framework for the years 2014-2020 and the Interinstitutional Agreement between the European Parliament, the Council and the Commission on cooperation in budgetary matters and sound financial management.

It is specified that the financial envelope shall cover for the period 2014 to 2020 for the three programmes (Kozloduy, Ignalina et Bohunice).

**Cofinancing:** Members request that every effort be made, on the one hand, to continue the co-financing practice established as part of pre-accession assistance and the assistance given over the period 2007-2013 for all three Member States' decommissioning efforts, and on the other, to attract co-financing from other sources as appropriate.

**Arbitration procedure:** disagreements over the interpretation of the Treaties and the award of contracts shall be submitted to an arbitration procedure. Resultant delays in construction may lead to the postponement of payment and reductions in the financial allocation. The Commission shall submit a report on this issue as part of the annual evaluation report referred to in the regulation.

**Ex ante conditionalities:** Members clarified the ex ante conditionalities to be fulfilled by Bulgaria, Lithuania and Slovakia. These three countries must provide the Commission with the information showing that they fulfil the conditionalities by 1 January 2014.

The Commission shall assess the information provided, ensuring in particular that critical managerial, legal, financial and technical problems have been resolved or measures have been taken to solve them. If there is a reasoned opinion by the Commission in respect of an infringement for non-compliance with conditionality, the Commission may decide to suspend all or part of the Union financial assistance.

**Annual work programme and implementing procedures:** at the beginning of each year of the 2014-2020 period, the Commission shall adopt one joint annual work programme for Kozloduy, Ignalina and Bohunice Programmes respectively specifying the objectives, expected results, target end dates, related performance indicators and timeline for the use of funds under each annual financial commitment.

At the end of each year of the 2014-2020 period, the Commission shall submit an evaluation report on the implementation of the joint annual work programmes. That report shall serve as a basis for the adoption of subsequent annual work programmes.

The Commission shall submit a yearly progress report on the implementation of the joint annual work programmes to the European Parliament and the Council.

**Protection of financial interests:** Members specify that by 31 March of the year following each accounting year, Member States shall report on the use of the financial envelope. The results of audits carried out by the Commission, the national audit bodies of the Member States in which the nuclear facilities to be declassified are situated and the Court of Auditors shall be communicated to the European Parliament.

**Interim evaluation:** no later than end 2017 (rather than 2015), an interim evaluation report shall be established by the Commission, in close cooperation with the Member States and the beneficiaries. On the basis of the results of that assessment, the Commission may review the appropriateness of the appropriations allocated to the Programme and their distribution amongst Kozloduy, Ignalina and Bohunice, in agreement with the Union's budgetary authorities and in accordance with the provisions of multiannual financial framework for the years 2014-2020.

**Final evaluation for the period 2014-2020:** the Commission shall carry out an ex-post evaluation in close cooperation with the beneficiaries. Before 31 December 2020, it shall establish a final evaluation report using appropriate qualitative and quantitative indicators. The evaluation report shall identify whether further Union financial assistance is needed under the next financial perspectives.

## Nuclear decommissioning assistance programmes in Bulgaria, Lithuania and Slovakia 2014-2020

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The European Parliament adopted by 554 votes to 17, with 72 abstentions, a legislative resolution on the proposal for a Council regulation on Union support for the nuclear decommissioning assistance programmes in Bulgaria, Lithuania and Slovakia.

Parliament approved the Commission proposal subject to the following amendments:

**Definition of decommissioning:** Parliament specified that the definition of 'decommissioning' is derived from the one found in the [ECA Special Report n°16/2011](#). Decommissioning covers preparatory activities prior to the final and all the activities taking place after the reactors are shut down: (i) the removal and the final disposal of spent fuel elements, (ii) decontamination, (iii) dismantling and/or demolition of the nuclear installations, (iv) the disposal of remaining radioactive waste materials and (v) the environmental restoration of the contaminated site. The decommissioning process ends when the installation is released from any regulatory control and radiological restriction.

**Objectives:** the general objective of the Programme is to assist the Member States concerned to implement steady process towards the irreversible decommissioning end state of nuclear power plants named in the regulation, in accordance with Union law on nuclear safety.

Parliament stressed the need to safely manage the long term storage and disposal of decommissioning waste in accordance with a detailed national waste management plan, to be measured by the quantity and type of stored and disposed of waste. It stated that the effective control of the evolution of the decommissioning process should be based on the establishment of meaningful qualitative and quantitative performance indicators, which can be easily monitored and reported on as necessary.

Any of the decommissioning programmes may also include measures to maintain the requisite high level of shutdown safety at the nuclear power plants.

**Budget:** annual appropriations shall be authorised by the budgetary authority without prejudice to the provisions of the Regulation laying down the multiannual financial framework for the years 2014-2020 and the Interinstitutional Agreement between the European Parliament, the Council and the Commission on cooperation in budgetary matters and sound financial management.

It is specified that the financial envelope shall cover for the period 2014 to 2020 for the three programmes (Kozloduy, Ignalina et Bohunice).

**Financial envelope:** the financial envelope for the implementation of the Programme for the period 2014 to 2020 shall be EUR 969 260 000.

That amount shall be distributed among the Kozloduy, Ignalina and Bohunice Programmes for the period 2014-2020 as follows:

- EUR 293 032 000 for the Kozloduy Programme;
- EUR 450 818 000 for the Ignalina Programme;
- EUR 225 410 000 for the Bohunice Programme.

**Cofinancing:** Parliament requested that every effort be made, on the one hand, to continue the co-financing practice established as part of pre-accession assistance and the assistance given over the period 2007-2013 for all three Member States' decommissioning efforts, and on the other, to attract co-financing from other sources as appropriate.

**Arbitration procedure:** disagreements over the interpretation of the Treaties and the award of contracts shall be submitted to an arbitration procedure. Resultant delays in construction may lead to the postponement of payment and reductions in the financial allocation. The Commission shall submit a report on this issue as part of the annual evaluation report referred to in the regulation.

**Ex ante conditionalities:** Parliament clarified the ex ante conditionalities to be fulfilled by Bulgaria, Lithuania and Slovakia. These three countries must provide the Commission with the information showing that they fulfil the conditionalities by 1 January 2014.

The Commission shall assess the information provided, ensuring in particular that critical managerial, legal, financial and technical problems have been resolved or measures have been taken to solve them. If there is a reasoned opinion by the Commission in respect of an infringement for non-compliance with conditionality, the Commission may decide to suspend all or part of the Union financial assistance.

**Annual work programme and implementing procedures:** at the beginning of each year of the 2014-2020 period, the Commission shall adopt one joint annual work programme for Kozloduy, Ignalina and Bohunice Programmes respectively specifying the objectives, expected results, target end dates, related performance indicators and timeline for the use of funds under each annual financial commitment.

At the end of each year of the 2014-2020 period, the Commission shall submit an evaluation report on the implementation of the joint annual work programmes. That report shall serve as a basis for the adoption of subsequent annual work programmes.

The Commission shall submit a yearly progress report on the implementation of the joint annual work programmes to the European Parliament and the Council.

**Protection of financial interests:** Members specified that by 31 March of the year following each accounting year, Member States shall report on the use of the financial envelope. The results of audits carried out by the Commission, the national audit bodies of the Member States in which the nuclear facilities to be declassified are situated and the Court of Auditors shall be communicated to the European Parliament.

**Interim and final evaluation:** no later than end 2017 (rather than 2015), an interim evaluation report shall be established by the Commission, in close cooperation with the Member States and the beneficiaries. On the basis of the results of that assessment, the Commission may review the appropriateness of the appropriations allocated to the Programme and their distribution amongst Kozloduy, Ignalina and Bohunice, in agreement with the Union's budgetary authorities and in accordance with the provisions of multiannual financial framework for the years 2014-2020.

**Final evaluation for the period 2014-2020:** provisions are introduced to define the framework of the evaluations of the Programme. No later than end 2017, an interim evaluation report shall be established by the Commission. On the basis of the results of that evaluation, the Commission may review the appropriateness of the appropriations allocated to the Programme and their distribution amongst the Kozloduy, Ignalina and Bohunice Programmes. A final evaluation following the implementation of the Regulation. The Commission shall submit the conclusions of these evaluations to the European Parliament and the Council.

## Nuclear decommissioning assistance programmes in Bulgaria, Lithuania and Slovakia 2014-2020

**PURPOSE:** to provide Union support for the nuclear decommissioning assistance programmes in Bulgaria and Slovakia.

**NON-LEGISLATIVE ACT:** Council Regulation (Euratom) No 1368/2013 on Union support for the nuclear decommissioning assistance programmes in Bulgaria and Slovakia, and repealing Regulations (Euratom) No 549/2007 and (Euratom) No 647/2010.

N.B.: the initial proposal was also on the decommissioning of the Ignalina nuclear power plant in Lithuania. However, in line with Protocol No 4 on the Ignalina nuclear power plant in Lithuania annexed to the Accession Act 2003, this matter is linked to the implementation of Protocol No 4 in which the high contracting parties had taken note of the Union's wish to give supplementary help to Lithuania for the treatment of the Ignalina power plant.

As a result, the present Regulation does not apply to the Lithuanian power plant decommissioning. This last is the subject of a separate Regulation (see [Council Regulation \(Euratom\) No 1369/2013](#) on Union support for the nuclear decommissioning assistance programme in Lithuania, and repealing Regulation (EC) No 1990/2006).

CONTENT: the present Regulation establishes a programme for the implementation of Union financial support for measures connected with the decommissioning of units 1 to 4 of the Kozloduy nuclear power plant in Bulgaria and units 1 and 2 of the Bohunice V1 nuclear power plant in Slovakia.

Objectives: the general objective of the Kozloduy and Bohunice programmes is to assist the Member States concerned to reach the decommissioning end state in Units 1-4 of Kozloduy and Units 1 and 2 at Bohunice V1, in accordance with the respective decommissioning plans, whilst ensuring that the highest safety standards are applied.

The specific objectives of the Kozloduy and Bohunice programmes are the following:

Kozloduy:

- dismantling in the turbine halls of units 1 to 4 and in auxiliary buildings;
- dismantling of large components and equipment in the reactor buildings of units 1 to 4;
- safely managing the decommissioning waste.

Bohunice:

- dismantling in the turbine hall and auxiliary buildings of reactor V1;
- dismantling of large components and equipment in the V1 reactor buildings;
- safely managing the decommissioning waste in accordance with a detailed waste management plan.

In order to achieve these objectives, precise indicators have been defined for the Kozloduy and Bohunice programmes to apply and verify. The Kozloduy and Bohunice programmes may also include measures to maintain a high level of safety at the units under decommissioning, including support with respect to the nuclear power plants' personnel

Financial envelope: in line with the Regulation fixing the Multi-Annual Financial Framework for 2014-2020, the financial envelope for the implementation of the Kozloduy and Bohunice programmes for the period from 2014 to 2020 shall be EUR 323 318 000 in current prices.

That amount is distributed between the Kozloduy and Bohunice programmes as follows:

- EUR 208 503 000 for the Kozloduy programme;
- EUR 114 815 000 for the Bohunice programme.

The Commission should review the performance of the Kozloduy and Bohunice programmes and assess the progress of those programmes against the milestones and target dates by the end of 2017 within the framework of the mid-term evaluation. Based on the results of that assessment, the amount of the appropriations allocated to the Kozloduy and Bohunice programmes, as well as the programming period and distribution of funds amongst the Kozloduy and Bohunice programmes and the Ignalina programme (as established in Council Regulation (Euratom) No 1369/2013), may be reviewed to take account of the progress made in the implementation of those programmes and to ensure that the programming and allocation of the resources are based on actual payment needs and absorption capacity.

Other types of eligible expenditure: the financial allocation for the Kozloduy and Bohunice programmes may also cover expenses pertaining to preparatory, monitoring, control, audit and evaluation activities which are required for the management of each programme and for the achievement of their objectives and also cover the expenses of technical and administrative assistance necessary to ensure the transition between those programmes and the earlier measures.

Ex ante conditionalities: Bulgaria and Slovakia should provide the Commission with the necessary information on the fulfilment of the ex ante conditionalities at the latest by the time of the budgetary commitment in 2014.

The Commission should assess the information furnished by ensuring that the critical problems of management and technique have been addressed or that measures have been taken to resolve them. If the Commission is of reasoned opinion that an infringement under non-compliance with the conditionalities set out or if the conditionalities are not fulfilled satisfactorily, the Commission may take a decision on suspension of all or part of the Union financial assistance.

Annual work programmes and forms of implementation: at the beginning of each year from 2014-2020, the Commission shall adopt a joint annual work programme for the Kozloduy and Bohunice programmes specifying, in respect of each programme, the objectives, expected results, related performance indicators and timeline for the use of funds under each annual financial commitments.

At the end of each year from 2014-2020, the Commission should establish a progress report on the implementation of the work carried out in the previous years. That progress report would be a basis for the adoption of the next joint annual work programme.

Measures for the protection of the financial interests of the Union are also provided for.

Mid-term and final evaluations: the Regulation provides for a mid-term evaluation report by 2017, at the level of results and impacts, the efficiency of the use of resources and its Union added value, with a view to adopting a decision amending or suspending those measures. A final evaluation at the end of the implementation of the Regulation is also foreseen. These different evaluations should be sent to the European Parliament and to the Council.

Transitional provisions: the Regulation would not affect the implementation of ongoing measures in relation to earlier decommissioning programmes up to their full completion.

Repeal: Regulations (Euratom) No 549/2007 and (Euratom) No 647/2010 are repealed with effect from 1 January 2014.

ENTRY INTO FORCE: 21.12.2013. The Regulation shall apply from 01.01.2014.

## Nuclear decommissioning assistance programmes in Bulgaria, Lithuania and Slovakia 2014-2020

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Corrigendum to Council Regulation (Euratom) No 1368/2013 of 13 December 2013 on Union support for the nuclear decommissioning assistance programmes in Bulgaria and Slovakia, and repealing Regulations (Euratom) No 549/2007 and (Euratom) No 647/2010 (Regulation originally published OJ L 346, 20.12.2013).

The corrections concern the provisions relating to the following provisions:

-to recital 7, 2<sup>nd</sup> sentence:

in place of: Within the framework of this envelope, an amount of EUR 500 million in 2011 prices, which is approximately EUR 553 million in current prices, ,

read: Within the framework of this envelope, the amount of EUR 860 million in 2011 prices, which is approximately EUR 969 million in current prices, ;

on page 3, the 1st subparagraph of Article 3(1):

in place of: The financial envelope for the implementation of the Kozloduy and Bohunice programmes for the period from 2014 to 2020 shall be EUR 323 318 000 in current prices. That amount shall be distributed between the Kozloduy and Bohunice programmes as follows:

- EUR 208 503 000 for the Kozloduy programme for the period from 2014 to 2020;
- EUR 114 815 000 for the Bohunice programme for the period from 2014 to 2020.

read: The financial envelope for the implementation of the Kozloduy and Bohunice programmes for the period from 2014 to 2020 shall be EUR 518 442 000 in current prices. That amount shall be distributed between the Kozloduy and Bohunice programmes as follows:

- EUR 293 032 000 for the Kozloduy programme for the period from 2014 to 2020;
- EUR 225 410 000 for the Bohunice programme for the period from 2014 to 2020.

## Nuclear decommissioning assistance programmes in Bulgaria, Lithuania and Slovakia 2014-2020

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The Commission presents a report on the implementation of the work under the nuclear decommissioning assistance programme to Bulgaria, Lithuania and Slovakia in the period 2010-2014.

Purpose of the measures: upon accession, Bulgaria, Lithuania and Slovakia committed to close down early eight older Soviet design nuclear power plants before the end of their scheduled lifetime. In exchange the Union agreed to assist financially the three Member States to decommission the power plants concerned:

- Kozloduy (KNPP) units 1 to 4 in Bulgaria,
- Ignalina (INPP) units 1 and 2 in Lithuania and
- Bohunice V1 (V1 NPP) units 1 and 2 in Slovakia.

EU assistance was implemented in three distinct periods. Two Council established a new legal base, providing further support to the decommissioning programmes for the period 2014- 2020. [The previous implementation report](#) describes the fulfilment of their initial commitment by the three Member States and the implementation of the assistance programme until 2009. This report describes the activities and results starting from 2010 and ending on 31 October 2014, except for financial data, which is reported on until 30 September 2014.

Main conclusions: during the period covered by the report, the focus passed to decommissioning activities. Lithuania, Slovakia and Bulgaria have built on their closure commitment by continuing the decommissioning works at the shutdown reactors. Whilst some delays have been experienced significant progress has also been made, not only in preparatory work and organisational changes but as well in the actual removal of buildings and equipment.

The financing needs for the completion of the decommissioning programmes have been established. The financing plans identify the gap between the needs and the secured funds, to which the EU assistance programme makes a major contribution. The constitution of the additional funds calls for a careful follow-up.

Decommissioning window: the emphasis is moving gradually from work of a preparatory nature to dismantling and treatment of related waste. Currently, the facilities necessary for decommissioning, treatment and storage of radioactive waste and spent nuclear fuel are under construction. The licensing documentation is prepared and dismantling has started. In Bulgaria and Slovakia the full decommissioning licences are expected shortly. Although delays occurred in some decommissioning projects, these are actively addressed to minimise their impact on the decommissioning end date, However, in Lithuania, delays to the overall timeline could not be avoided.

Energy window: the energy sector has benefited with projects in line with national energy policies. During the reporting period the focus shifted to decommissioning, though in Bulgaria a significant proportion of the assistance was allocated to the energy sector. The implementation of projects already started will continue for several years, but no new projects in the energy sector will be supported.

Outlook: the issuance of second stage decommissioning licenses in Bulgaria and Slovakia opens the way to the dismantling of core systems. This should translate next year into an increased flow of material being removed from the nuclear installation. The detailed objectives and indicators defined in the implementation procedures will allow precise monitoring of the progression of the work with quantitative information. In particular, the planned introduction of Earned Value Management (EVM) methodology in the three programmes will support project management at local level and further enhance the effectiveness of the Commission monitoring and reporting.

From 2015 a more detailed and quantitative description of the implementation of the work carried out with respect to the work programme will



be based on reliable, consistent and comparable indicators.

The Commission services (DG ENER) and its shared resource directorate) are preparing an audit of the proposed national agency in Slovakia and generally support the evolution towards full ownership of the decommissioning at national level.

## Nuclear decommissioning assistance programmes in Bulgaria, Lithuania and Slovakia 2014-2020

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The Commission presented a report on the implementation of the work under the nuclear decommissioning assistance programme to Bulgaria, Lithuania and Slovakia in 2015 and previous years.

Reminder of the objectives: upon their accession to the EU, Bulgaria, Lithuania and Slovakia committed to close down eight Soviet-designed nuclear power plants before the end of their scheduled lifetime. In exchange, the EU committed to provide financial assistance to the three Member States for decommissioning the designated power plants, namely:

- Kozloduy Nuclear Power Plant (NPP) units 1 to 4 in Bulgaria;
- Ignalina NPP in Lithuania; and
- Bohunice V1 NPP in Slovakia.

Since 2014, the scope of the nuclear decommissioning assistance programmes is to assist the relevant Member States in implementing the steady process towards the decommissioning end-state whilst ensuring that the highest safety standards are applied.

Management of the programme: the Commission recalled that it implements the assistance programmes through indirect management. Since 2001 implementation tasks have been entrusted to the European Bank for Reconstruction and Development (EBRD), with contributions to three International Decommissioning Support Funds. In Lithuania since 2003 an increasing portion of the tasks have been entrusted to a national Central Project Management Agency (CPMA). In 2015, upon request of the Slovak Republic, the Commission services assessed the national Slovak Innovation and Energy Agency (SIEA) with the aim of establishing a new implementation channel for the Bohunice programme.

The report stated that the detailed objectives and indicators (proposed by the three Member States and approved by the Commission with the adoption of the procedures) enabled precise monitoring of the work progress based on quantitative information. Moreover, in cooperation with the beneficiaries, the Commission services introduced the earned value management methodology in the three programmes.

The assistance programmes are subject to regular audits and evaluations.

In 2015, the Commission services focussed their in-field monitoring on radiation protection systems, in line with the requirement to ensure application of the highest safety standards. The completion of this specific monitoring action is scheduled in 2016 and should bring additional indicators of safety related performance.

Budget and financing: the Commission adopted the 2014 and 2015 annual work programmes and the associated financing decisions on 30 October 2014 and 30 July 2015 respectively.

The relevant delegation agreements with the implementing bodies (EBRD, CPMA) were signed in June 2015. All funds earmarked for 2014 were committed under these agreements on 5 June 2015 (EBRD) and on 5 October 2015 (CPMA). The 2015 funds earmarked for Bulgaria and Lithuania were committed in 2015. For Slovakia, the 2015 commitment is pending finalisation of the delegation agreement with the SIEA, currently under negotiation.

The financing needs for completion of the decommissioning programmes have been established, as gaps were identified between the needs and the already secured funds, for which the EU assistance programme is a major contribution. On the basis of the presently available information, no financial shortfall is expected in any of the three countries until 2020.

According to the Commission, the accomplishment of the objectives of the 2014-2020 financial framework will bring substantially improved safety conditions at all three sites. However, as at the end of 2014, the constitution of the required additional funds in the long term (after 2020) calls for a careful follow-up, especially in Lithuania.

Progress and performance: the report noted that significant progress has been made, not only in preparatory work and organisational changes, but also in the actual removal of buildings and equipment, and processing of radioactive waste. The following points were highlighted:

- all the reactors are shut down, with all but one core defueled (Ignalina NPP Unit 2);
- key milestones were reached, decommissioning licenses were issued in Bulgaria and Slovakia, in Lithuania the commissioning of the spent fuel and waste management infrastructures entered the cold trials stage. These achievements represent significant steps towards enhanced safety at the sites;
- substantial progress has been achieved for all three decommissioning programmes, this is especially noticeable where dismantling activities have generated significant amounts of materials, mostly for clearance and then recycling.

The Commission noted that at the reference date for reporting, 30 June 2015, the performance was generally in line with expectations, with some points of excellence and some residual risks.

Outlook: the report noted that the issuing of licences in Bulgaria and Slovakia opened the way to starting the dismantling of core systems. In Lithuania, the commissioning of the spent fuel interim storage facility enters into its final stage with the transfer of spent fuel to the dry storage facility starting in 2017.

In the coming years, the clean-up activities will generate an increased flow of materials being removed from the nuclear installations.

The mid-term evaluation - due by the end of 2017 - will provide a substantiated assessment of the overall progress, of the short-term outlook as well as of the planning up to completion.

## Nuclear decommissioning assistance programmes in Bulgaria, Lithuania and Slovakia 2014-2020

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The Commission presented a report on the implementation of the work under the nuclear decommissioning assistance programme to Bulgaria, Lithuania and Slovakia in 2016 and previous years.

Reminder of the objectives: upon their accession to the EU, Bulgaria, Lithuania and Slovakia committed to shut down eight Soviet-designed nuclear power plants before the end of their scheduled lifetime. In exchange, the EU committed to provide financial assistance for decommissioning the designated power plants, namely:

- Kozloduy Nuclear Power Plant (NPP) units 1 to 4 in Bulgaria;
- Ignalina NPP in Lithuania;
- Bohunice V1 NPP in Slovakia.

The objective of the nuclear decommissioning assistance programmes is to assist the relevant Member States in implementing the steady process towards the decommissioning end-state whilst maintaining the highest safety standards.

Programme management: the Commission recalled that it implemented the programmes in the framework of indirect management.

Since 2001, the implementation of the programmes budget has been entrusted to the European Bank for Reconstruction and Development (EBRD), with contributions to three International Decommissioning Support Funds and to the Central Project Management Agency (CPMA) in Lithuania since 2003 and the Slovak Innovation and Energy Agency (SIEA) since 2016.

In accordance with the new governance approach for the multiannual financial framework 2014-2020, each of the Member States concerned has appointed a programme coordinator (ministerial or state secretary rank) who is responsible for programming, coordination and monitoring of the decommissioning programme at the national level.

In 2016, the Commission successfully implemented all actions following the 2015 internal audit on the governance and supervision of the programmes. It also accepted the recommendations made in September 2016 by the European Court of Auditors and started the mid-term evaluation in November 2016.

Budget and financing: the Commission adopted the 2014, 2015 and 2016 annual work programmes and the associated financing decisions committing the assigned budget through delegation agreements with EBRD (EUR 120.6 million for Kozloduy IDSF, EUR 9.0 million for Ignalina IDSF, EUR 30.3 million for Bohunice IDSF), CPMA (EUR 176.6 million) and SIEA (EUR 62.5 million).

On the basis of the Commissions 2016 study, funding under the 2014-2020 MFF is adequate to achieve the objectives set out.

There is no financial shortfall expected in any of the 3 countries until 2020. The raising of additional funds needed in the long term (post 2020) calls for a careful follow-up, especially in Lithuania.

Project progress and performance: the report concluded that Bulgaria, Lithuania and Slovakia have advanced in the decommissioning of reactors:

- all the reactors are shut down, with all but one core defueled. In 2016, key milestones were reached; the issuance of the decommissioning license for Kozloduy Units 3 and 4; and restart of defueling of the Ignalina NPP;
- the Commission considered that three Member States further advanced dismantling activities to the extent that the decommissioning process is clearly irreversible and that none of the reactors can be restarted under economically viable conditions;
- programmes are progressing towards the most challenging phases of decommissioning. For example, in Bohunice, where the programme is furthest advanced, the operator started dismantling and decontamination of the reactor primary circuits and faced initial difficulties as the programme enters in the technically most challenging phase. However, the governance setup is proving to be apt for early detection of issues through monitoring and key performance indicators, and prompt identification of mitigation measures;
- the difficulties in commissioning the waste management infrastructure have now been mitigated and the relevant projects are back on track under strict monitoring.

Outlook: the Commission will perform the mid-term evaluation of the programmes and report the results to the Parliament and the Council by the end of 2017. In this context, the detailed implementation procedures will be revised to further streamline the programmes management.

Major expected developments in the field are:

Bulgaria: the start of construction of the National Disposal Facility and the finalisation of other key waste management infrastructures;

Lithuania: the steady progress of defueling and the preparations for dismantling the graphite core;

Slovakia: the decontamination of the primary circuit and the award of key contracts for dismantling.

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## Nuclear decommissioning assistance programmes in Bulgaria, Lithuania and Slovakia 2014-2020

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The Commission presented a report on the evaluation and implementation of the EU nuclear decommissioning assistance programmes in Bulgaria, Slovakia and Lithuania.

Context of the assessment: upon accession, Bulgaria, Lithuania and Slovakia committed themselves to shutting down eight nuclear reactors of Soviet design, before the end of their scheduled lifetime. For its part, the Union has agreed to provide financial assistance to these three Member States for the decommissioning of the reactors concerned:

- Kozloduy nuclear power plant in Bulgaria, units 1 to 4;
- the Ignalina nuclear power plant in Lithuania;
- the Bohunice V1 nuclear power plant in Slovakia.

Two Council Regulations were adopted on 13 December 2013 to provide support to these decommissioning programmes in the Multiannual Financial Framework (MFF) 2014-2020, continuing the assistance provided in previous periods.

During the MFF 2014-2020, the Commission has reported three times on this subject.

The present report, as set out in the mid-term evaluation roadmap, analyses and presents: (i) to what extent the Kozloduy, Bohunice and Ignalina programmes have achieved their objectives in terms of results and impacts; (ii) the efficiency of the use of resources; and (iii) EU added value.

Main findings: the report concludes that Bulgaria, Slovakia and Lithuania have made effective and efficient progress towards decommissioning their reactors.

The decommissioning operators are all fully working on decommissioning activities. Slovakia has advanced the most and is currently carrying out Dismantling & Decontamination (D&D) in the reactor building at the Bohunice site. Decommissioning and decontamination is well advanced in the auxiliary buildings at the Kozloduy and Ignalina sites.

The programmes are generally on track to achieve the specific objectives of the Regulations with the funding provided in this MFF.

In addition, long-standing issues that were carried over from the previous financial framework have finally been resolved. Key infrastructures for managing spent fuel and radioactive waste have either become operational or is in its final stages of commissioning, giving new impetus to decommissioning activities.

Funding requirements and indicators: the evaluation shows that the preparation and endorsement of the respective decommissioning plans in 2014 was a major milestone and defined the limits of the assistance programmes, with the financing needs to achieve the decommissioning end state eventually established.

At the mid-term stage, these needs were confirmed for the Bohunice and the Ignalina programmes; for the Kozloduy programme, the ongoing revision of the decommissioning plan may result in an increase in cost estimates post-2020.

In addition, the detailed objectives and indicators provided a good basis for measuring progress towards the achievement of the specific objectives. However, the analysis also showed that it would be opportune to recalibrate these indicators in order to ensure continued effective monitoring and possible comparability between the programmes.

No additional funding will be needed in the 2014-2020 MFF. However, the raising of additional funds needed in the long term (post-2020) for the Ignalina programme calls for a careful follow-up in Lithuania.

The national contribution levels achieved appear suitable for sustaining proper efficiency; however, they are not established in the legal basis, which creates residual uncertainties.

An increase in national contributions compared to those of the Union and the establishment of a clear and formal framework for co-financing (whether at programme or project level) would encourage greater national ownership and more economical management by beneficiaries.

Safety and security: the analysis also demonstrated that greatly improved safety levels will be achieved at the sites as a result of EU funding in this MFF.

Major expected developments in the field include:

- in Bulgaria: the steady progress of construction of the National Disposal Facility, the management of legacy waste and the start of major D&D works in the reactor building;
- in Slovakia: the final dismantling of the reactor cores;
- in Lithuania: the steady progress of defueling and the preparations for dismantling the irradiated graphite core, which is a first of a kind project of an unprecedented scale.

Perspectives: based on the results of this evaluation, the Commission deems that these measures should not be amended or suspended in the current MFF. The specific objectives remain valid while the implementation procedures should be preferably revised to benefit from the lessons learned. Any such update should aim to:

- reinforce the role of the Monitoring Committees and that of the Programme Coordinator;
- further improve the governance system by streamlining the programme management cycle, refining the content of programming and monitoring documents;
- update and sharpen targets and indicators for multi-annual measures that go beyond 2020.

## Nuclear decommissioning assistance programmes in Bulgaria, Lithuania and Slovakia 2014-2020

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The Commission presents its report on the implementation of the work under the nuclear decommissioning assistance programme to Bulgaria, Lithuania and Slovakia in 2018 and previous years.

In June 2018, the Commission established the mid-term evaluation report of the European Union nuclear decommissioning assistance programmes in Bulgaria, Lithuania and Slovakia.

The present report follows up the evaluation and reviews the further accomplishments obtained in 2018.

Progress and performance

Bulgaria - Kozloduy programme

The Kozloduy programme made significant progress in the dismantling of equipment in the turbine hall and in the controlled area. Important waste management infrastructures key in order to proceed with the decommissioning became operational in 2018. In parallel, construction works are underway for the National Disposal Facility, i.e. the low and intermediate level waste surface repository, which will receive large quantities of the decommissioned materials.

The mid-term evaluation report showed that the Bulgarian authorities concluded that the overall cost of the Kozloduy programme (estimate at completion) needed to be revised upward (+23%) and Bulgaria has correspondingly increased its national contributions. The end date of the programme (2030) was confirmed.

#### Slovakia Bohunice programme

The Bohunice programme has substantially progressed in 2018. Decontamination & Dismantling (D&D) works in the turbine halls and auxiliary buildings were finalised in 2018 with the demolition of the four V1 NPP cooling towers. Furthermore, important D&D works have also been performed in the reactor-building: in 2018 the decontamination of the spent fuel pools and other tanks in the controlled area was finalised, while the dismantling of large components of the reactor coolant systems started.

Based on the revised decommissioning plan, the mid-term evaluation report concluded that the overall cost of the decommissioning programme (estimate at completion) is slightly decreasing and the completion date remains fixed at the end of 2025. This estimate is supported by a state-of-the-art plan for risks and contingencies, which provides a high level of confidence in the estimations made.

#### Lithuania Ignalina programme

The removal of spent fuel assemblies from both reactor buildings (units 1 and 2) started in September 2016. The second reactor was defueled fully in February 2018, i.e. 9 months earlier than planned. Both reactors are defueled and transfer operations of spent fuel from the ponds to the Interim Spent Fuel Storage Facility continue steadily. As at 31 December 2018, more than 50% of spent fuel assemblies were safely loaded into casks and put into storage. According to the schedule, all spent fuel assemblies will be removed in July 2022.

#### Main conclusions

The report concluded that in line with the expectations set for the current MFF, Bulgaria, Lithuania and Slovakia continued making effective and efficient progress in decommissioning their reactors in 2018. The management system has increasingly proven to cope with challenges and setbacks due to the complexity of the programmes. The preparation and endorsement of the respective decommissioning plans in 2014 was a major milestone and defined the limits of the assistance programmes, with the financing needs to achieve the decommissioning end state eventually established. At the mid-term stage, these needs were confirmed for the Bohunice and the Ignalina programmes; for the Kozloduy programme, the due revision of the decommissioning plan resulted in an increase in cost estimates post-2020. The increase of estimates did not result in an equal increase of the programmes envelope since Bulgaria committed to cover the increase to a large extent.

The mid-term evaluation report thus confirmed that no additional funding is needed in the current MFF (2014-2020) to achieve the objectives stated in the respective Council regulations and that the programmes should be continued after 2020.

National contribution levels are currently not established in the legal basis, which creates residual uncertainties. Appropriate national, relative to EU, contributions and defining a clear and formalised framework for co-financing is expected to encourage greater national ownership and economy-seeking on the part of beneficiaries. The progress accomplished so far assures that greatly improved safety levels will be achieved at the sites as a result of EU funding in this MFF.

Knowledge sharing amongst the three beneficiaries has positively impacted the programmes and contributed to the latest successes.

#### Future developments

In the next period major expected developments in the field include:

- in Bulgaria: the steady progress of construction of the National Disposal Facility, the management of legacy waste and the start of major D&D works in the reactor building;
- in Slovakia: the final dismantling of the reactor cores;
- in Lithuania: the steady progress of defueling and the preparations for dismantling the irradiated graphite core, which is a first of a kind project of an unprecedented scale.

## Nuclear decommissioning assistance programmes in Bulgaria, Lithuania and Slovakia 2014-2020

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The Commission presents its report on the implementation of the work under the nuclear decommissioning assistance programme to Bulgaria, Lithuania and Slovakia in 2019 and previous years.

In June 2019, the Commission established the mid-term evaluation report of the European Union nuclear decommissioning assistance programmes in Bulgaria, Lithuania and Slovakia.

The present report follows up the evaluation and reviews the further accomplishments obtained in 2019.

#### Progress and performance

The Commission stated that to date, progress against the objectives is generally satisfactory and the cost of the work has been as planned.

#### Bulgaria - Kozloduy programme

The Kozloduy programme made significant progress on dismantling in the auxiliary buildings, e.g. completing the dismantling of equipment in the turbine hall in August 2019, a year earlier than scheduled. The plasma melting facility, a first-of-its-kind facility for the high-performance volume reduction of radioactive waste, started operations in November 2018 (target: March 2018) and continued with the support of the system provider until the end of 2019. It is now in industrial operation and the technical and financial evaluation of the first operational campaign will be finalised in 2020.

The similar design of the Kozloduy and Bohunice reactors provides an excellent opportunity to share experiences, methods and tools. This knowledge-sharing reduces risks and cost. The end date of the programme (2030) was reconfirmed.

#### Slovakia Bohunice programme

The Bohunice decommissioning programme is the most advanced of the three programmes assisted by the EU and will probably see the first

complete decommissioning of a VVER-type reactor. The programme made substantial progress in 2019. After completion of the dismantling of the turbine hall equipment and the auxiliary buildings, including the demolition of the four cooling towers, the dismantling of the large components in the reactor building started in earnest.

By July 2019, all 12 steam generators, each made up of 145 tonnes of steel, had been removed from the reactor building and transported to the former turbine hall. In the second half of 2019, the pressurisers were cut up and the construction started of two wet-cutting workshops in which the reactor internals will be segmented under water. The decommissioning is scheduled to be completed by 2025.

#### Lithuania Ignalina programme

The reactor design includes a large graphite core. Its decommissioning is a first-of-a-kind challenge and is scheduled to last until 2038. The decommissioning process is therefore at an earlier stage: currently the spent-fuel assemblies are being safely stored in a new dedicated facility. The transfer operation is expected to last until July 2022. Meanwhile, preparations are under way to dismantle the reactor cores. A thorough process of identification and assessment of available options (scheduled for 2022) aims to mitigate the risks involved.

#### Main conclusions

In line with expectations, Bulgaria, Lithuania and Slovakia continued to make effective progress in decommissioning their nuclear power plants in 2019. Indications to date are that greatly improved safety levels will be achieved at the sites as a result of EU funding under the 2014-2020 MFF. The completion of the decommissioning programmes up to their planned end-state will require additional funding. In 2018, the Commission adopted proposals for the programmes continuation in 2021-2027. They lay down inter alia national contribution levels, thus removing remaining uncertainties regarding the required funding.

#### Future developments

The outlook for 2020 promises further major developments:

##### Bulgaria

- progress will have to be made on the management of legacy waste, and decontamination and dismantling activities in the reactor building;

##### Slovakia

- steady progress is expected in dismantling large components from the reactor building, including the reactor vessels, leading to the last stage of decommissioning;

##### Lithuania

- the very low-level waste disposal facility will be used for the first time;
- construction of the low-level waste disposal facility will start; and
- preparations for dismantling the irradiated graphite core will move to concrete action with expert support.

For the three programmes, the Commission will carry out a study on the earned value management systems already in place in order to identify best practices and possible routes for ongoing improvement.