Council of the
European Union

Brussels, 22 June 2017
(OR. en)

10601/17

FIN 408
ATO 31
CADREFIN 78

COVER NOTE

From:	Secretary-General of the European Commission, signed by Mr Jordi AYET PUIGARNAU, Director
date of receipt:	20 June 2017
To:	Mr Jeppe TRANHOLM-MIKKELSEN, Secretary-General of the Council of the European Union
No. Cion doc.:	COM(2017) 328 final
Subject:	REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL on the implementation of the work under the nuclear decommissioning assistance programme to Bulgaria, Lithuania and Slovakia in 2016 and previous years

Delegations will find attached document COM(2017) 328 final.

Encl.: COM(2017) 328 final

EUROPEAN
COMMISSION

Brussels, 20.6.2017
COM(2017) 328 final

REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL

on the implementation of the work under the nuclear decommissioning assistance programme to Bulgaria, Lithuania and Slovakia in 2016 and previous years

1 INTRODUCTION

This report reviews the progress in 2016 and previous years under the European Union nuclear decommissioning assistance programmes in Bulgaria, Lithuania and Slovakia. It fulfils the reporting requirements of the relevant Council Regulations[1,2] and forms the basis for adopting the 2017 annual work programmes under the assistance programmes. In the current Multiannual Financial Framework (MFF 2014-2020), the Commission has reported twice on this subject[3,4].

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; and
- Bohunice V1 NPP in Slovakia.

The objective of the nuclear decommissioning assistance programmes[1,2] is to assist the relevant Member States in implementing the steady process towards the decommissioning end-state whilst maintaining the highest safety standards.

In all three cases, the end-state is defined as brownfield. The disposal of spent fuel and radioactive waste in a deep geological repository is not included in the scope of the decommissioning assistance programmes, and has to be developed by each Member State in its national programme for the management of spent fuel and radioactive waste as required by the relevant directive[5,6].

---

1 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 (OJ L346, 20.12.2013, p.1) & correction (OJ L8, 11.1.2014, p.31).

2 Council Regulation (EU) No 1369/2013 of 13 December 2013 on Union support for the nuclear decommissioning assistance programme in Lithuania, and repealing Regulation (EC) No 1990/2006 (OJ L346, 20.12.2013, p.7) & correction (OJ L8, 11.1.2014, p.30 & OJ L121, 24.4.2014, p.59).

3 Report from the Commission to the European Parliament and the Council on the implementation of the work under the nuclear decommissioning assistance programme to Bulgaria, Lithuania and Slovakia in 2015 and previous years — COM(2016) 405 final.

4 Report from the Commission to the European Parliament and the Council on the implementation of the work under the nuclear decommissioning assistance programme to Bulgaria, Lithuania and Slovakia in the period 2010-2014 — COM(2015) 78 final.

5 Council Directive 2011/70/Euratom of 19 July 2011 on establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste, OJ L199, 2.8.2011, p. 48-56.

6 Report from the Commission to the Council and the European Parliament on progress of implementation of Council Directive 2011/70/Euratom and an inventory of radioactive waste and spent fuel present in the Community's territory and the future prospects – C(2017) 236 final.

2 PROGRAMME ADMINISTRATION

2.1 Method of implementation

The Commission entrusts the implementation of the programmes' budget to pillar assessed implementing bodies (indirect management), i.e.:

- in Bulgaria to the European Bank for Reconstruction and Development (EBRD), with contributions to the Kozloduy International Decommissioning Support Fund (KIDSF) since 2001;
- in Lithuania to the EBRD, with contributions to the Ignalina International Decommissioning Support Fund (IIDSF) since 2001, and to the Central Project Management Agency (CPMA) since 2003;
- in Slovakia to the EBRD, with contributions to the Bohunice International Decommissioning Support Fund (BIDSF) since 2001, and to the Slovak Innovation and Energy Agency (SIEA) since 2016.

Thus, for the Ignalina programme and the Bohunice programme the EU funds are routed through two channels.

The Commission has obtained evidence through pillar assessments that the implementing bodies (EBRD, CPMA and SIEA) fulfil the requirements for indirect management as provided for in Article 60 of the financial regulation[7].

2.2 Annual programming and monitoring

The Commission modified the governance of the programmes for the MFF 2014-2020 in order to set out clear roles and responsibilities, and introduced increased planning, monitoring and reporting requirements[8].

In line with this revised governance approach, each concerned Member State has appointed a Programme Coordinator (ministerial or state secretary rank) to be responsible for the programming, coordination and monitoring of the decommissioning programme at national level. The Programme Coordinators have to submit the annual work programmes and the Commission adopts them along with the financing decisions, in accordance with the examination procedure defined in Article 5 of Regulation (EU) No 182/2011[9].

Committees with monitoring and reporting functions are in place for each Member State, co-chaired by a Commission representative and the Programme Coordinators. Implementing bodies monitor on a day to day basis. In addition, the Commission closely follows project implementation through desk and on-the-spot reviews on a

[7] Regulation (EU, Euratom) No 966/2012 of the European Parliament and of the Council of 25 October 2012 on the financial rules applicable to the general budget of the Union and repealing Council Regulation (EC, Euratom) No 1605/2002.

[8] Commission Implementing Decision of 7.8.2014 on the rules of application for the nuclear decommissioning assistance programmes for Bulgaria, Lithuania and Slovakia for the period 2014-2020 — C(2014) 5449 final.

[9] Regulation (EU) No 182/2011 of the European Parliament and of the Council of 16 February 2011 laying down the rules and general principles concerning mechanisms for control by Member States of the Commission's exercise of implementing powers

biannual basis. To further support this process, the Commission asked the beneficiaries to introduce an earned value management (EVM) system in order to measure project performance and progress in an objective manner.

2.3 Audits and evaluations

In 2016, the Commission has successfully implemented all actions following the 2015 internal audit on the governance and supervision of the programmes.

The main deliverable was the in-depth assessment[10] of the robustness of the financing plans of the relevant Member States for the safe completion of decommissioning. The study confirmed the original positive conclusions of the Commission (i.e. complete, relevant and comprehensive decommissioning plans; appropriate overall base cost estimation for the decommissioning programmes and sufficient resources to accomplish objectives of the 2014-2020 framework; no financing gap). It also analysed the financing gaps beyond 2020 especially in the case of Lithuania. In this respect, the study showed that the three economies are demonstrably capable to finalise the funding of their programmes through national financial resources either with negligible impact or, in Lithuania, in a scale of around 0.3-0.5% on the annual state budget over seven years.

In September 2016, the European Court of Auditors published its performance audit report[11] with recommendations to the Commission and the Member States. The Commission accepted the recommendations, either fully or partially, and has addressed or will continue addressing them accordingly through:

- continued support to knowledge sharing and implementation of best practices,
- clarifying and strengthening the framework for national co-financing,
- exploring whether dedicated decommissioning funding should continue after 2020,
- launching a debate on options for shared radioactive waste disposal in the Union, and
- assessing whether costs of decommissioning and radioactive waste management are transparently accounted for in all Member States.

In November 2016, the Commission services started the mid-term evaluation[12]. This evaluation includes a public consultation and an assessment of the programmes results and impacts, the efficiency of the use of resources and its Union added value. It will also address the scope for modification of the detailed implementation procedures[8].

---

10 "Nuclear Decommissioning Assistance Programme (NDAP) – Assessment of the robustness of the financing plans considering the economic-financial-budgetary situation in each concerned Member State and of the relevance and feasibility of the detailed decommissioning plans", Deloitte, NucAdvisor, VVA Europe, A study prepared for the European Commission DG Energy

11 ECA Special Report 22/2016 - *EU nuclear decommissioning assistance programmes in Lithuania, Bulgaria and Slovakia: some progress made since 2011, but critical challenges ahead.*

12 http://ec.europa.eu/smart-regulation/roadmaps/docs/plan_2016_249_ndap_evaluation_en.pdf

2.4 Budgetary implementation

The Commission adopted the 2014, 2015 and 2016 annual work programmes and the associated financing decisions[13,14,15], 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). The Commission's payments were based on forecast contract needs and progress in project implementation.

3 CO-FINANCING

Kozloduy programme

Between 2014 and 2016, EUR 42.8 million were disbursed from national resources to cover costs of the Kozloduy decommissioning plan, whilst the disbursement from the Kozloduy IDSF were EUR 86.1 million, for a co-financing rate of 33% from Bulgarian resources.

In its report[11] the European Court of Auditors estimated that the financial shortfall for the period 2021-2030 was EUR 28 million. However, Bulgaria is currently performing the three-yearly review of the decommissioning plan as required by its national legislation. The Commission will assess the results of this review when submitted by the Programme Coordinator, and will then report to the Parliament and the Council.

Ignalina programme

From the inception of the programme until June 2016, EUR 137.9 million were disbursed from national resources to cover costs of the Ignalina decommissioning plan whilst the Ignalina IDSF and CPMA disbursed EUR 805.8 million, for a co-financing rate of 15% from Lithuanian resources.

In the current MFF a trend of increased co-financing has been observed. The disbursements from national sources are expected to be EUR 44 million in 2016 and 2017. In the same period, the Ignalina IDSF and the CPMA are expected to disburse EUR 176 million, for a co-financing rate of 20% from Lithuanian resources in 2016 and 2017.

---

13 Commission Implementing Decision of 30.10.2014 on the adoption of the financing decision for the implementation of the nuclear decommissioning assistance programmes for Bohunice, Ignalina and Kozloduy in 2014 — C(2014) 8104.

14 Commission Implementing Decision of 30.07.2015 on the adoption of the financing decision for the implementation of the nuclear decommissioning assistance programmes for Bohunice, Ignalina and Kozloduy in 2015 — C(2015) 5211.

15 Commission Implementing Decision of 21.11.2016 on the adoption of the work programmes for 2016 and the financing for the implementation of the nuclear decommissioning assistance programmes for Bohunice, Ignalina and Kozloduy in 2016 — C(2016) 7394.

The financial shortfall for the period 2021-2038 remains substantial at EUR 1.561 billion[11]. The relevant national legislation[16] in force requires the Lithuanian government to negotiate additional Union support after 2020 and commits to charging the State budget for all costs where no other resources are found.

Bohunice programme

From the inception of the programme until end 2015, the Slovak National Nuclear Fund disbursed EUR 148 million, whilst the Bohunice IDSF disbursed EUR 189 million, for a co-financing rate of 44% from Slovak sources.

For the period 2016 to 2025 (end of programme), the allocated national funds amount to EUR 328 million, whereas the EU allocated resources are EUR 482 million. The remaining shortfall for the period 2021-2025 is EUR 92 million[11].

4 PROGRESS AND PERFORMANCE

Article 2 of each of the two regulations[1,2] defines the main specific objectives of the decommissioning programmes for the 2014-2020 funding period. These objectives are further detailed in implementation procedures[8] which established baselines for each decommissioning programme up to the respective end-state.

All the reactors are shut down, with all but one core[17] 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 three Member States further advanced dismantling activities to the extent that the decommissioning process is clearly irreversible.

These achievements also represent significant steps towards enhanced safety at the sites. The key performance indicators show that the performance is generally aligned with expectations and helped in identifying issues at the earliest in order to establish effective mitigation measures.

4.1 Kozloduy programme

The Kozloduy nuclear power plant (NPP) units 1-4 are VVER 440/230 reactors: units 1 and 2 were shut down in 2002 and units 3 and 4 in 2006.

As of 2013, the decommissioning is under the control of the Bulgarian *State Enterprise for Radioactive Waste*[18] (SERAW), a dedicated decommissioning organisation whose mission is the safe management of radioactive waste on the territory of the Republic of Bulgaria. Under the supervision of the Ministry of Energy, SERAW is the licence holder / operator in charge of the decommissioning of Kozloduy NPP units 1-4 and of the future National Disposal Facility (NDF).

[16] TAR, Jun 16, 2014, No. 7639, Amendment law XII-914, Jun 5, 2014
[17] Ignalina NPP Unit 2.
[18] http://dprao.bg/en

Programme baseline

The main features of the Kozloduy programme baseline[19] are: brownfield end-state to be achieved by 2030 and a total estimated cost of EUR 1.107 billion (2013). The baseline is substantiated in the Kozloduy NPP decommissioning plan[20], approved by the Bulgarian authorities, as confirmed in the decommissioning licences.

Progress

As at the reporting reference date the progress against the objectives was satisfactory:

- The reactor cores and ponds are defueled and the decommissioning licences for Kozloduy NPP units 1-2 and units 3-4 were issued in November 2014 and July 2016 respectively.
- Dismantling of the turbine hall has progressed (~13430 tons i.e. one third of metal components was dismantled and ~5978 tons of concrete slabs were demolished).
- Dismantling in the reactor buildings continued (~196 tons of metal components were dismantled).
- Significant amounts of materials were released as non-radioactive (~13049 tons).
- The waste management infrastructure is suitable for the current dismantling and decontamination activities, but additional facilities are needed in the future. The disposal route of low level waste (>90% in volume of total radioactive waste) is under preparation and construction of the National Disposal Facility (NDF) will commence in 2017. Moreover, the construction of both the facilities for high volume reduction of radioactive waste and for fragmentation and decontamination progressed substantially and commissioning is scheduled in 2017.

Performance

In 2016, the overall performance was generally adequate; dismantling of metal components in the turbine hall reached 93% of the planned values and the amount of demolished concrete structures exceeded the plan (half-year ahead of schedule); however, the dismantling in the reactor buildings did not yet deliver the planned amount of materials.

The schedule performance was satisfactory for many decommissioning projects; however, delays to some projects could not be prevented. As reported last year[4], the programme generally faces greater risks from administrative and legal issues rather than technical causes. These risks could have threatened the programme's critical path; therefore, they were addressed in the 2016 annual work programme and mitigated. In particular the environmental impact assessment for the construction of the NDF was successfully completed.

Since 2014, the earned value of the programme implemented with Union financial assistance has been aligned with actual costs, demonstrating a satisfactory cost performance.

---

[19] With reference to previous versions, the revised plan advances the end date of the programme by five years and the new cost estimate represents a decrease of 11%.

[20] The plan complies with nationally defined requirements and meets International Atomic Energy Agency (IAEA) standards.

4.2 Lithuania — Ignalina nuclear power plant

The Ignalina NPP consists of two RBMK 1500 reactors: units 1 and 2 were shut down in 2004 and in 2009 respectively.

The Lithuanian *State Enterprise Ignalina Nuclear Power Plant*[21] (INPP) is the licence holder / operator in charge of the facilities under decommissioning and of the waste disposal facilities. It operates under the control of the Ministry of Energy. In the last year, INPP has further adapted its structure to an effective decommissioning organisation, stronger in project management.

Programme baseline

The main features of the Ignalina programme baseline[22] are: brownfield end-state to be achieved by 2038 and a total estimated cost of EUR 3.377 billion. The programme baseline is substantiated in the final decommissioning plan[20], approved by the Minister of Energy of the Republic of Lithuania on 25 August 2014.

Progress

At the reporting reference date the progress against the objectives was satisfactory:

- The removal of spent fuel assemblies from the spent fuel ponds in Units 1 and 2 started in September 2016.
- Ignalina NPP Unit 1 operating license conditions were adapted in October 2015 to authorise further dismantling and decontamination of equipment.
- Dismantling and decontamination activities in the turbine hall progressed to 99% in unit 1 and over 30% in unit 2, which corresponds to 19576 tons of dismantled and decontaminated equipment from 2014 to the end of June 2016. This is almost 50% of the target for the MFF.
- The new facility for interim dry storage of spent fuel is operational.
- The waste management infrastructure is appropriate for the present needs of dismantling and decontamination activities, but additional facilities are needed in the future. The disposal route of low level waste (>90% in volume of total radioactive waste) is under preparation and the design of the surface disposal is expected to be approved in 2017. Moreover, the new solid waste treatment and storage facilities will be commissioned in 2018.

Performance

In 2016 the dismantling of equipment was conducted with adequate pace in the turbine halls as well as in the service buildings connecting them to reactor buildings. The management of waste was also satisfactorily in line with or above target.

The transfers of the first spent fuel casks from the reactor buildings to the new interim storage facility were executed as planned.

---

[21] http://www.iae.lt/en/

[22] With reference to previous versions (2005), the revised plan led to a doubling of the cost estimate and postponement of the programme end date by 9 years.

Presently no major contractual disputes affect the programme, however the schedule performance needs to be improved in some areas such as the finalisation of the commissioning of the new solid waste treatment and storage facilities.

The Earned Value analysis suggests that after three years (2014-2016) the overall programme is six months behind schedule.

Since 2014 the earned value of the programme implemented with Union financial assistance has been aligned with actual costs, demonstrating a satisfactory cost performance.

4.3 Slovakia – Bohunice V1 nuclear power plant

The Bohunice V1 NPP consists of two VVER 440/230 reactors: units 1 and 2 were permanently shut down in 2006 and in 2008 respectively.

The Slovak *Jadrová a vyraďovacia spoločnosť* (JAVYS) is a dedicated decommissioning organisation whose mission is the safe decommissioning of the nuclear facilities, spent nuclear fuel management and management of radioactive waste on the territory of the Republic of Slovakia. It operates under control of the Ministry of Economy. JAVYS is the licence holder / operator in charge of decommissioning Bohunice V1 NPP, spent fuel management and waste disposal facilities.

Programme baseline

The main features of the Bohunice programme baseline[23] are: brownfield end-state to be achieved by 2025 and a total estimated cost of EUR 1.246 billion[24]. The programme baseline is substantiated in the detailed Bohunice V1 NPP decommissioning plan[20], dated 22 October 2014.

Progress

At the reporting reference date the progress towards meeting the objectives was satisfactory:

- The reactor cores and ponds are defueled, and the Slovak nuclear regulator issued the licence[25] for stage 2 (final) decommissioning of Bohunice V1 NPP in December 2014.
- All systems but one in the turbine hall and auxiliary buildings of reactor V1 were dismantled. Dismantling of the cooling towers was contracted out, later than planned but for a significantly lower price than initially estimated and without impact on the critical path of V1 NPP decommissioning schedule.

[23] With reference to previous versions, the 2014 detailed decommissioning plan retained the original work-breakdown structure and programme end date (2025), but re-evaluated the overall cost estimate with an increase of 9%.

[24] Later revised to EUR 1.239 billion.

[25] As per the national regulations, decommissioning licences are staged; the first-stage decommissioning licence, authorising dismantling activities outside controlled areas, was issued in 2011 as planned; the second-stage decommissioning licence was issued in 2014, ahead of schedule, authorising reactor dismantling.

- Dismantling and decontamination in the reactor building started; the insulation materials of the primary circuits were fully removed; the decontamination of the primary circuits was relaunched; and the tender was called for the dismantling of large components of the reactor coolant system.
- Significant amounts of materials were released as non-radioactive (~74692 tons).
- The waste management infrastructure is appropriate for the present needs of dismantling and decontamination activities, and additional facilities are being realised for the future needs. The disposal route of low level waste (>90% in volume of total radioactive waste) is being extended in capacity at the existing repositories in Mochovce. Also the new interim storage for intermediate level waste which cannot be disposed of at Mochovce is in the final stages of construction.

Performance

In 2016 the dismantling of equipment in the reactor building was conducted with satisfactory performance, in spite of the difficulties encountered in the project for the decontamination of the primary coolant circuits. As anticipated in the previous report[4], the delays in this project had an impact on other activities reducing the output from treatment and conditioning of radioactive waste.

The Earned Value analysis suggests that after three years (2014-2016) the programme end date would be deferred by at least one year, without taking mitigation measures. Yet the improved management system introduced for the MFF 2014-2020 enabled early detection of the issues so that the operator could initiate a timely review of the work break-down structure to ensure completion on schedule (2025). Results of this analysis will be illustrated in the mid-term evaluation.

Since 2014 the earned value of the programme implemented with Union financial assistance has been aligned with actual costs, demonstrating a satisfactory cost performance.

4.4 Energy sector projects

In the current MFF, the assistance programme does not provide new financial support for mitigation measures in the energy sector; however, until the end of 2013, the assistance programmes had contributed to projects in the energy sector in line with the respective accession treaties and national energy policies. Many projects are completed to date, though a portion of the funds committed before 2014 is still to be spent on ongoing projects.

Bulgaria

Assistance was provided to projects for energy efficiency (e.g. in public buildings, street lighting, mining equipment), electricity transmission and distribution, and power generation. Disbursements reached 63% of commitments.

Lithuania

All projects implemented through the Ignalina International Decommissioning Support Fund are completed.

Through the CPMA, assistance was provided to projects for energy efficiency (e.g. in public buildings and street lighting); disbursements reached 63% of commitments.

Slovakia

The assistance programme contributed to measures in the transmission sector as well as to energy efficiency measures in public buildings. The latter set of projects was completed. Major projects were also completed in the transmission sector. Disbursements reached 57% of commitments.

5 CONCLUSIONS

Bulgaria, Lithuania and Slovakia progressed in the decommissioning of the reactors subject to this report. The preparation and endorsement in 2014 of their respective decommissioning plans was a major milestone in this respect. Given the dismantling progress, the Commission considers that none of these reactors can be economically restarted.

The financing needs to achieve the decommissioning end state have been established. The long term management of spent fuel and radioactive waste is out of scope of the Union assistance programme, hence fully under the remit of the Member State, in line with the relevant directive[5].

On the basis of the 2016 Commission study[10], the funding of the MFF 2014-2020 is suitable to accomplish the objectives set out in Article 2 of each of the regulations[1,2]. This will result in substantially improved levels of safety at the sites; for Kozloduy and Bohunice it is expected that remaining radiological hazards will be minimal; whereas for Ignalina the aim is to remove all spent nuclear fuel from the reactor units and establish the complete infrastructure needed to safely finalise the decommissioning.

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.

In the current financial framework the programmes steadily progressed 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. Lessons learnt will be beneficial to the Kozloduy and Ignalina programmes; in this latter case

the specific nature of the reactor core makes it more difficult to dismantle, as little experience is available worldwide[26].

As stressed in the Court of Auditors report[11], the implementation of the waste management infrastructure experienced significant delays in the past, particularly in Lithuania and Bulgaria; long standing issues have now been mitigated and the relevant projects are back on track under strict monitoring.

The detailed objectives and indicators (proposed by the three Member States and approved by the Commission[8]) enabled close monitoring and measuring of the work progress based on quantitative information. Moreover, the earned value management methodology applied to the three programmes (see Table 2 in annex) improved the comparability of progress in implementation and enhanced the effectiveness of Commission supervision.

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[8] will be revised to further streamline the programmes' management; the share of national co-financing will be critically examined and non-decommissioning-related costs, if any, will be identified.

Major expected developments in the field are:

- in Bulgaria the start of construction of the National Disposal Facility and the finalisation of other key waste management infrastructures;
- in Lithuania the steady progress of defueling and the preparations for dismantling the graphite core, which is a unique project of unprecedented scale;
- in Slovakia the decontamination of the primary circuit and the award of key contracts for dismantling.

[26] In the Union, reactors with graphite cores have not been dismantled yet, in spite many of them were shut down several years ago.