



Kozloduy NPP EAD



ANNUAL REPORT 2022



WE SUCCEED WITH COMPETENCE AND TEAM SPIRIT

Dear readers,

I am extremely pleased to present the accomplishments of Kozloduy NPP for the year 2022.

I am gratified to highlight the challenges we have successfully overcome and the good job we have done. With their responsible attitude to the daily tasks, with the competence and team spirit the nuclear power specialists ensured the safe, robust, and reliable operation of our nuclear units. The energy crisis that swept over Europe emphasised even more the nuclear power plant's key role as a leading producer and a trusted supplier of clean electricity - a guarantee of the stability of the energy system of Bulgaria and the region.

Beyond doubt, our achievements so far are fruit of the highly qualified and dedicated team of professionals at Kozloduy NPP. These are the people behind the well-deserved reputation of the Bulgarian nuclear power plant as a safe and efficient generating facility. These are the experts whose commitment and continuous strive to improve the work processes contributed to Kozloduy NPP's established image as one of the best nuclear power plants in Europe and globally.

Building on its extensive experience, the power plant is looking forward to the future with confidence. This is also the direction of our sustainable and consistent efforts to ensure a smooth transition between generations, so that our knowledge is passed on and successfully mastered by the young professionals who are joining us now. I believe that even brighter prospects and further excellence in performance lie ahead of us.

Georgi Kirkov
Chief Executive Officer

A LEADING CARBON-FREE ENERGY PRODUCER



ELECTRICITY GENERATION

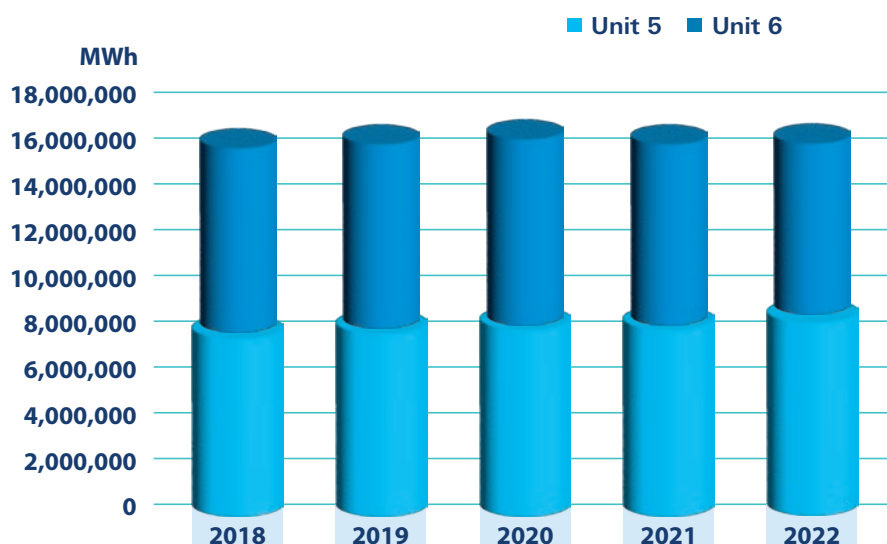
In 2022, the nuclear power units of Kozloduy NPP EAD performed with optimal loads and without any events affecting safety or the environment. The annual electricity generation of the Plant amounted to 16,462,018 MWh which is 32.7% of the national electricity generation for the last year.

Unit 5 generated 8,457,881 MWh of gross electricity – a record for its entire operating history, with 2% more compared to 2021 due to the shorter downtime for the outage and refuelling. Since its commissioning in 1987, the unit has generated a total of 211,462,374 MWh.

Unit 6 gross electricity generation for 2022 was 8,004,137 MWh. The total amount generated since the start-up of the unit in 1991 is 201,180,756 MWh.

From July 1974, when the Plant's first nuclear unit was connected to the grid, until the end of 2022, Kozloduy NPP generated 683,639,087 MWh of electricity.

ELECTRICITY GENERATED (GROSS)



IN 2022, UNIT 5 SCORED A RECORD GENERATION FOR ITS OPERATING HISTORY – 8,457,881 MWh.

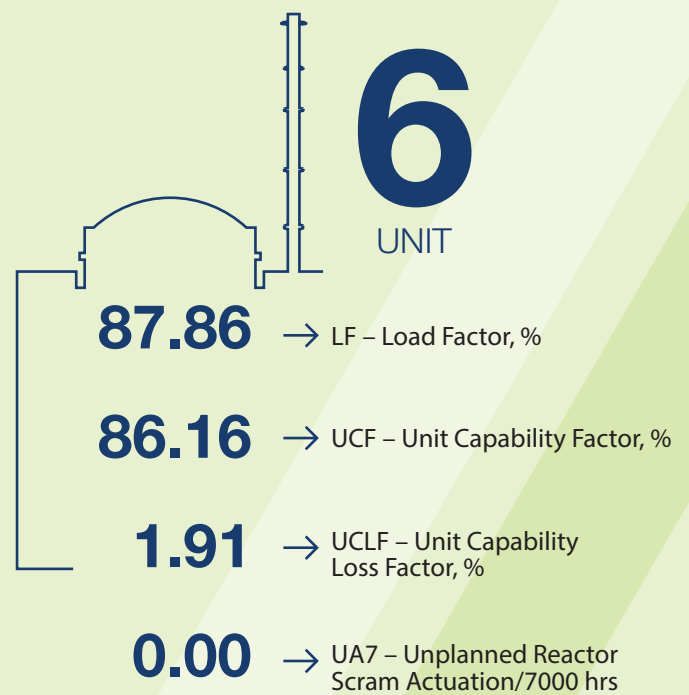
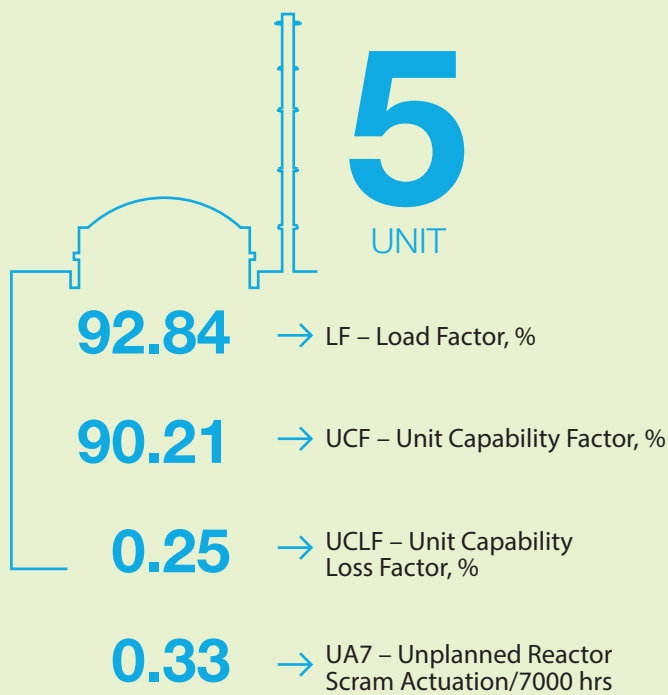


ELECTRICITY SOLD, BY MARKET SEGMENTS

In 2022, Kozloduy NPP supplied to the Bulgarian grid 15,615,000 MWh of net active electricity, sold under the current national regulatory framework.

According to the monthly quotas determined by the Energy and Water Regulatory Commission, 24.8% of the net energy generated went to the Public Supplier at regulated prices. The remaining portion of the electricity was traded on the organised exchange market administered by the Independent Bulgarian Energy Exchange EAD.

Kozloduy NPP also produces heat energy to cater for the houseloads of the facilities on-site and to provide heating to domestic and other consumers in the town of Kozloduy. The heating energy supplied to end users in 2022 was 75,328 MWh.



SPECIFIC PERFORMANCE INDICATORS

The WANO and the IAEA have defined specific performance indicators for monitoring and analysis of the achieved level of reliability and safety of the nuclear units and also for trending nuclear energy status globally.

In 2022, thanks to the good work organisation, Kozloduy NPP reached unit capability factor (UCF) of 88.19%, while the unplanned capability loss factor (UCLF) had a better value than the reference one. Globally, values of UCF exceeding 85% and of UCLF up to 3% are evidence of high degree of optimisation of the production process. The performance indicators values reported in 2022 confirm the established trend for a high level of reliability, safety and efficiency in the operation of the Bulgarian nuclear power plant.

Units 5 and 6 Load Factor (LF) for the year was 90.35%. The values around and over 90% which Kozloduy NPP has achieved in the recent years rank the Plant among the best in the group of nuclear power plants with water-water reactors according to this criterion.



KOZLODUY NPP PERFORMANCE INDICATORS CONFIRM THE HIGH LEVEL OF RELIABILITY, SAFETY AND EFFICIENCY.





MAINTENANCE PROGRAMME

Kozloduy NPP annual maintenance programme includes preventive maintenance and repair, performance tests and checks, specialised inspections and diagnostic non-destructive testing. The objective is to ensure the long-term operability of the facilities at Units 5 and 6 and the common plant facilities, and the structures, systems and components of the safety systems, systems important to safety, and the systems of importance for the production process. In compliance with its licensing conditions, the requirements of the technical specifications for safe operation and the Plant internal requirements, the necessary maintenance and repair activities are carried out annually. The main scope of activities within the annual maintenance programme is performed while the units are shut down for scheduled outage and refuelling.

In parallel with the necessary maintenance and repair activities within the scheduled annual outage, the measures identified in the long-term operation programmes are also carried out to increase safety and manage the equipment lifetime.

All maintenance and repair works in the Plant are performed with high quality, in the required scope, and with the Company's own funding.

The whole scope of maintenance, repair and modernisation activities planned for 2022 was implemented within optimal timelines owing to the efficient work organisation in place and the productive coordination among the teams. The outage of Unit 5 lasted 34 days, and the outage of Unit 6 was 35 days.



ALL MAINTENANCE AND REPAIR WORKS IN THE PLANT ARE PERFORMED WITH HIGH QUALITY AND WITH THE COMPANY'S OWN FUNDING.



SAFETY – OUR PRIORITY

LICENSING REGIME

Kozloduy NPP EAD operates four nuclear facilities – Units 5 and 6 with WWER-1000 reactors and two spent nuclear fuel storage facilities (for wet and dry storage).

The operation of the nuclear facilities is subject to regulatory control on behalf of the NRA at the CM of the Republic of Bulgaria. Specialised oversight is exercised by the MEW, MH, MRDPW, SAMTS, etc.

The nuclear facilities are operated according to the provisions of the operating licences issued by the NRA. The Company maintains licences to use IRS for commercial purposes, for transport of radioactive substances and for specialised training. In 2022, the Units 5 and 6 operating licences, as well as the licence for use of IRS to perform non-destructive examination involving radiation methods for Inspection Body of type C – Diagnostics and Control NDE Centre, were amended.



THE SAFETY OF
THE NUCLEAR
FACILITIES IS SUBJECT
TO CONTINUOUS
INDEPENDENT STATE
SUPERVISION.

SAFETY CULTURE

As a prerequisite for safety enhancement, Kozloduy NPP has adopted a systematic long-term approach to establishing and developing a strong safety culture. For its continuous enhancement, a set of measures is applied to foster in the personnel an attitude of responsible personal behaviour and prioritisation of safety over other goals in respect of the plant operation as well as to develop values related to the motivation for continuous enhancement of safety culture. The SC Committee, an advisory body to the Safety and Quality Director, is in charge of the coordination and control of the implementation of the activities that have been planned to achieve the above.

Self-assessments of the safety culture (according to the IAEA methodology) as well as of the nuclear safety culture (according to the WANO methodology) are regularly conducted at the nuclear power plant.

All the activities for SC maintenance, assessment and enhancement included in the annual work plan for 2022 have been completed. Applying the IAEA methodology, a safety culture self-assessment was conducted actively engaging a large portion of the personnel. As a result, strengths and areas for improvement were identified. A programme for safety culture and security culture improvement is being developed at Kozloduy NPP EAD.

NUCLEAR SAFETY

The operation of the nuclear power units at Kozloduy NPP fully complies with the conditions of the licences, the requirements of the technical specifications for safe operation and the operating procedures. In 2022, there were no violations of the safe operation limits and conditions. Two operating events were registered and reported to the NRA. They were rated below the INES scale/level 0 (events without safety significance). Based on an analysis of the causes, corrective actions were defined in order to avoid recurrence. One reactor scram occurred on Unit 5 throughout the year.

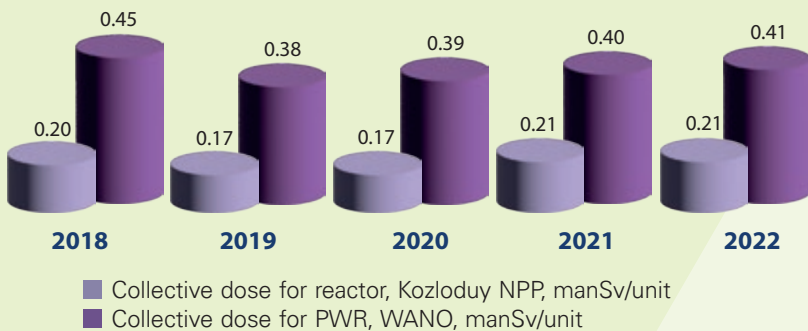
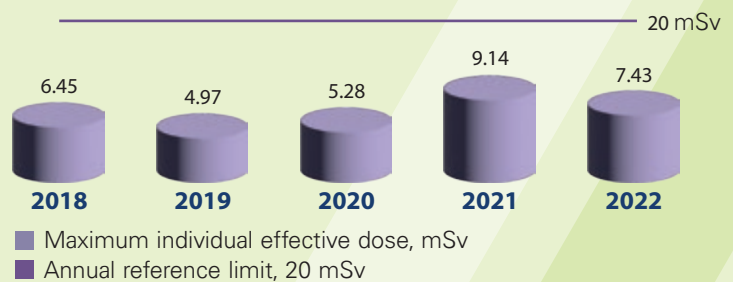


RADIATION PROTECTION

A priority goal for Kozloduy NPP is to ensure the highest level of radiation protection measures through continuous optimisation based on the ALARA (As Low As Reasonably Achievable) principle. For that purpose, a strict and effective radiation monitoring, training and motivation of the employees, advance planning, preparation and analysis of the activities, implementation of own and international good practices are applied.

In 2022, the maximum individual effective dose was 7.43 mSv which constitutes 37% of the annual regulatory limit. The personnel collective dose from the operation of Units 5 and 6 was 0.42 manSv, or 0.21 manSv on average for each reactor. Comparisons with the data from WANO annual reports pointed out that the values measured at the Plant are consistently lower than the average annual values for collective dose resulting from the operation of this type of reactors worldwide.

MAXIMUM INDIVIDUAL EFFECTIVE DOSE IN THE CONTROLLED AREA OF KOZLODUY NPP, mSv



COLLECTIVE DOSE FOR A SINGLE REACTOR OF KOZLODUY NPP COMPARED TO THE WANO INDICATOR, manSv/unit

RADIATION MONITORING OF EFFLUENT DISCHARGES TO THE ENVIRONMENT

The high-quality control over the technological processes at Kozloduy NPP is evident in the data from the radiation monitoring of liquid and gaseous discharges performed in compliance with the highest international standards. The annual limit values of the discharges' activity stipulated at the Plant are significantly lower compared to the authorised ones. Independent external monitoring of discharges to the environment is performed by the NRA, MEW and NCRRP. Monitoring data is also reported annually to the European Commission.

In 2022, the discharges of radioactive noble gases, aerosols, and iodine-131 were many times lower than 1 percent of the established annual limits - 0.02%, 0.01% and 0.015% respectively. The radioactive substances in the waste water from the Plant were within 0.04% of the reference levels. The tritium content of the discharges to the environment was also within the relevant limits.

RADIOACTIVE WASTE MANAGEMENT

The types and quantities of radioactive wastes generated during the operation of Kozloduy NPP are predicted in advance, and their further management is planned. The management of RAW is governed by the principle of minimising their quantities.

The RAW generated in 2022 (about 94 tonnes solid and 230 m³ liquid radioactive waste) was transferred to the SE RAW for processing.

SPENT NUCLEAR FUEL MANAGEMENT

Spent nuclear fuel at the Plant is managed in accordance with the updated Strategy for SNF and RAW Management until 2030 and stored with strict adherence to all relevant safety conditions. After being kept in spent fuel pools located at the reactors, the spent fuel is moved to the wet SFSE which is common for all the units. SNF from the WWER-440 reactors loaded in CONSTOR 440/84 casks is stored in the dry SFSE.

During the annual refuelling outages, six transfers of SNF from the Unit 5 SFP and six transfers from the Unit 6 SFP were carried out to the wet SFSE.

In 2022, six inspections were carried out at Kozloduy NPP to verify the compliance with the Nuclear Non-proliferation Treaty safeguards by the NRA, IAEA and EC.

EMERGENCY PLANNING AND PREPAREDNESS

In 2022, training was conducted for 927 employees of Kozloduy NPP, as well as employees of SE RAW, officers of the Kozloduy NPP On-site RPO, and officers of the On-site FSCP – Kozloduy NPP. Specialised training under a separate curriculum was provided for 19 representatives of the Plant emergency first-aid team. According to the annual schedule, two general emergency drills were conducted, two drills with the NRA and the SE RAW, two drills to test the preparedness of the Kozloduy NPP staff to respond in the event of a chemical emergency and one unexpected drill during non-working hours with the participation of Plant employees on duty and teams of the On-site FSCP – Kozloduy NPP.

In order to promote the safe operation of the nuclear power plant among the local community, 468 students and 56 teachers from the municipalities of Kozloduy and Miziya were trained last year.

In 2022, the required performance tests of all the systems of the new Off-site Emergency Response Centre in Kozloduy were conducted.



NUCLEAR SECURITY

A high level of nuclear security is maintained at Kozloduy NPP in accordance with the current international standards. In 2022, an infrared surveillance system was installed on Unit 6. Additional components were installed in the video surveillance systems as well as in the access control system. A complete modernisation is being designed in order to increase the reliability and level of control at the checkpoints. The computer security measures were improved by expanding the monitoring of IT systems.

In order to maintain the level of security culture, a self-assessment was conducted during the year applying the IAEA methodology, including interviews and surveys of the Company's personnel. The corrective actions proposed based on the self-assessment findings are pending implementation.

To improve the coordination and operational capabilities of the bodies involved with the security of the Plant, the necessary interaction is maintained during full-scale tactical exercises.

CYBERSECURITY

The Plant cybersecurity system is updated on a regular basis. For this purpose, a number of risk-proportional organisational and technical measures are applied reflecting the specifics of the Company's activity. The measures ensure the availability, integrity and confidentiality of the information throughout its life cycle within and through the information and communication systems. The activities ensuring cybersecurity are in line with the goals laid down in the Company's internal documents as well as with the legal requirements, applicable international standards and the European Cybersecurity Skills Framework.

The high efficiency of the Plant's network and information security system is proven by the fact that in 2022 there was no registered event that could be classified as a cyberattack.



KOZLODUY NPP IS BUILDING AND DEVELOPING A MODERN CYBERSECURITY SYSTEM.

FIRE SAFETY

Kozloduy NPP strictly complies with the national fire safety requirements and applies the best international practices and modern technologies in this area. By observing the implemented measures, the risks of fires and ignitions are minimised and maximum protection of the nuclear facilities is guaranteed.

The application of fire safety rules and regulations is systematically controlled through planned inspections and the resulting corrective actions. In 2022, a set of 209 corrective actions to enhance fire safety was proposed. Preventive activity is also carried out to preclude fires by exercising construction supervision in the course of the investment process.

In 2022, continuing training was conducted for the shift staff and employees directly involved with the fire safety control in the Plant's structural units. Fires and ignitions were not registered on the industrial site, and the inspection conducted by the RD FSCP - Vratsa confirmed compliance with the fire safety rules and regulations at Kozloduy NPP.

RADIOLOGICAL ENVIRONMENTAL MONITORING

The power plant radioecological monitoring covers the industrial site, 2 km Precautionary Action Zone, the Bulgarian part of the 30 km Urgent Protective Action Planning Zone, and monitored points within the 100 km radius surrounding Kozloduy NPP in the Bulgarian territory.

The radiation parameters of key environmental components (air, water, soil, vegetation, agricultural produce) are subject to continuous monitoring involving detailed and systematic studies that use approved and validated methods for measurement and analysis at the accredited laboratory of the power plant. The activities are fully harmonised with the requirements of art. 35 of the Euratom Treaty, Recommendation 2000/473/Euratom, and IAEA documents.

Together with the monitoring carried out by Kozloduy NPP, which is agreed with the competent authorities on behalf of the MEW and MH, and is approved by the NRA, independent external monitoring as per programmes of the ExEA at the MEW, and of the NCRRP at the MH is also in place.

Over the year, the gamma background levels measured at the monitoring points on the site and within the 100 km zone did not deviate from the natural gamma background levels specific for the region. The data from the automated monitoring system are displayed on information boards in the populated areas nearby and transmitted in real time to Kozloduy NPP, from where they are transferred to the ExEA and NRA.

Over 1,180 measurements of the gamma background radiation and more than 4,200 analyses of over 2,290 samples of different environmental constituents were conducted throughout 2022. The gamma background results did not deviate from the natural background levels typical for the area and were fully comparable with data from previous years. The atmospheric air human-induced activity featured values close to the natural background ones, much below the permissible limits. No radiological effects due to the operation of the Plant on the water of the Danube river and drinking water sources in the region were observed. The total beta activity of water from natural water bodies, and the radiation status of drinking water satisfied the health sanitary norms. The operation of Kozloduy NPP had no effect on the radio-ecological status of soils in the area or the staple foods produced locally, such as milk, agricultural crops, etc. The human-induced activity of fish in the Danube river upstream and downstream the Kozloduy NPP site is also examined. The results from upstream and downstream the river are fully comparable and many times below the limits. The environmental radiation parameters remain within normal background levels.

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THERE ARE 36 CONTROL POINTS FOR THE TERRESTRIAL AND 7 CONTROL POINTS FOR THE AQUATIC ECOSYSTEMS WITHIN THE 30 KM ZONE.



EVALUATION OF PUBLIC DOSE EXPOSURE

Due to the low levels of emissions into the environment during the operation of the Plant, the public dose exposure in the area is negligible. For 2022, the maximum effective annual dose per member of the public in the 30 km zone was conservatively estimated at 4.4 $\mu\text{Sv/a}$, continuing the trend of recent years for this radiation parameter to vary slightly – between 4 and 7 $\mu\text{Sv/a}$, which is hundreds of times below the natural background exposure level nationwide (2.33 mSv/a) and about 30 times below the regulatory dose limit.

The evaluation employs verified and validated modelling programmes adapted to the respective geographical and hydrological specificities of the Kozloduy NPP surrounding area. The programmes are based on the CREAM methodology approved by the European Union, and the MODARIA platform of the IAEA. The results are subject to independent control by the NCRRP and are commensurate with the ones reported by other nuclear power plants with WWER reactors in the EU and across the world.



OCCUPATIONAL HEALTH AND SAFETY

Preserving the staff life, health and working capacity in their labour activity is one of the Company's major goals. Ensuring healthy working conditions and high level of industrial safety at Kozloduy NPP is achieved by applying a preventive approach. OHS requirements are met for all workplaces, taking into account the workplace and labour activity specifics as well as the particular circumstances of the work process. The necessary collective and personal protective equipment and continuous monitoring and analysis of the workers' health are ensured.

In order to achieve a high level of self-control and personal commitment to safe behaviour, all workers are continuously provided with information on the subject through briefings, safe work instructions, examples of good practices, continuing training and the opportunity to enhance their qualifications.

In 2022, based on the implemented measures, the

industrial injury rate at Kozloduy NPP EAD was 0.09 – significantly below the average values for the industry – 1.25 and for the country – 0.64.



ENVIRONMENTAL PROTECTION

In 2022, all the measures and activities for environmental protection were completed as planned. The permits granted to the Company in accordance with the Environmental Protection Act, the Water Act, and the Waste Management Act have been maintained up-to-date. In 2022, a decision was obtained to extend the term of the permit for waste water discharge to the Main Drain Canal until March 2025.

The adopted separate waste collection system slows down the design fill-up rate of the Plant landfill for non-radioactive domestic and industrial waste – throughout the six years of operation, only 28% of the Stage II capacity has been filled. In 2022, a Plan to Minimise the Amount of Landfilled Waste was developed with specific measures to reduce the amount of mixed domestic waste accepted at the landfill. The non-radioactive waste transport registration document issued to the Company under the WMA was also updated. About 1,670 tons of non-radioactive waste were transferred to independent licensed organisations for recycling or subsequent safe treatment.

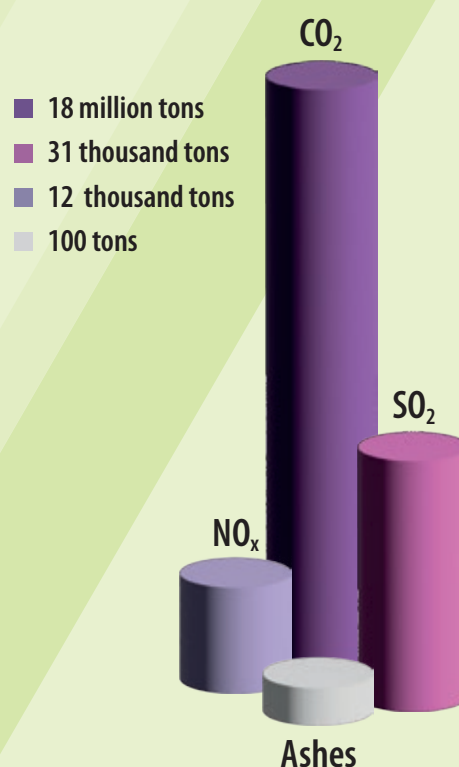
Throughout the year, all the scheduled samples of wastewater, surface and underground water were collected and analysed. The Kozloduy NPP accredited laboratories and Vratsa Regional Lab at the ExAE performed about 1,400 tests. The results fully comply with the individual emission limits specified for the Plant. Three inspections were carried out by the RIEW, Vratsa, during which no non-compliances were found and no prescriptions were issued.



THE MOTTO OF KOZLODUY NPP – CLEAN ENERGY.



EMISSIONS OF GREENHOUSE AND OTHER HARMFUL GASES SAVED IN 2022 BY KOZLODUY NPP COMPARED TO CONVENTIONAL THERMAL POWER PLANTS (TONS)





MANAGEMENT AND ETHICS

MANAGEMENT SYSTEM

The management system of Kozloduy NPP EAD ensures integrated implementation of safety, occupational health and safety, environmental, security, quality and economic requirements, taking into account the interaction between technical, human and organisational factors in a way that assures the overriding priority of safety requirements in the implementation of activities.

At the beginning of 2022, the project for the transition of the management system to the applicable standards in this field was finalised, which is in accordance with the terms and conditions of the Operating licence of Kozloduy NPP Unit 6. As a result of the completed project, compliance with the requirements of the IAEA Safety Standard GSR Part 2 'Leadership and Management for Safety' has been achieved, taking into account the applicable statutory and regulatory requirements, the principles and requirements set out in the applicable IAEA and WANO Safety Standards and Guides, the requirements of EN ISO 9001:2015 'Quality management systems. Requirements', EN ISO 14001:2015 'Environmental management systems', EN ISO 45001:2018 'Occupational health and safety management systems', and other standards applicable in the Company.



KOZLODUY NPP EAD
MANAGEMENT SYSTEM
ENSURES THE PRIORITY
OF SAFETY IN THE
IMPLEMENTATION OF
ACTIVITIES.

The management system of Kozloduy NPP EAD is implemented, evaluated and improved in order to ensure and enhance the nuclear facilities safety, and to promote and support a strong safety culture of the personnel.

IMPLEMENTATION OF ANTI-CORRUPTION PRACTICES

Kozloduy NPP implements an administrative procedure that regulates the terms and conditions for receiving, registering and verifying alerts, provides protection for persons who report corruption, irregularities, fraud, abuse, etc., to strengthen public and civil control and increase public trust. Alerts or complaints can be submitted by email, through the document registry system, on the hotline, through alert boxes placed in different buildings on site, and through an electronic form on the corporate website. The examination of the alerts received is carried out on the principle of confidentiality of the information and protection of the anonymity of the whistle-blowers.

INTERNAL AUDIT

The internal audit activities at Kozloduy NPP EAD are carried out in accordance with the Internal Auditing in the Public Sector Act, the International Standards for the Professional Practice of Internal Auditing, the Code of Ethics for Internal Auditors, the Regulations of the Internal Audit unit, and the Methodology for Internal Audit in the Public Sector approved by the Minister of Finance.

In 2022, the audit assurance engagements set out in the Annual Audit Plan were completed. This has provided the internal auditors with an objective assessment of the audit subjects. Feedback is also sought from the audited units on the usefulness and impact of the audit engagements, which contributes to the continuous improvement of the internal audit system at the nuclear power plant.



FINANCIAL PERFORMANCE



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KOZLODUY NPP EAD CONTRIBUTED BGN 5,532 MILLION TO THE STATE AND MUNICIPAL BUDGETS AND PAID BGN 890 MILLION DIVIDEND TO BEH EAD.

Kozloduy NPP EAD ended 2022 in a stable financial position which is of key significance for ensuring safe, efficient and environmentally friendly generation of energy.

The reported data for the year show that the Company's set business objectives have been fulfilled. The financial and economic indicators are good, with a decrease as compared to 2021.

The Company's net profit is BGN 729 million (BGN 890 million for 2021), and the cash and cash equivalents amount to BGN 739 million (BGN 914 million for 2021).

The decline in the reported financial result is mainly due to the earmarked contributions paid

to the ESS Fund for providing compensations to non-household end customers in relation to the increased electricity prices.

The operating income from the activity of the Company was BGN 6,055 million. The electricity sale revenues were BGN 6,035 million – more than twice as much as last year's BGN 2,703 million. The significant growth is the result of the high exchange prices.

The revenues from sales on the regulated market amounted to BGN 228 million, with an increase of 41% compared to 2021, as a result of the increased quota from 01 July 2022 and the increased price set by the EWRC.

The revenues from sales at non-regulated prices were BGN 5,805 million, which is by 129% above the amounts reported for the previous year. The increase is due to the registered spike in exchange prices and the change in the structure of market sales. The dominant share (99%) of the revenues was from exchange transactions executed in the Day Ahead segment.

The Company's operating expenses during the current year amounted to a total of BGN 5,243 million and significantly exceeded the amount of BGN 1,677 million reported in 2021. The increase is due to the accrued earmarked contributions to the ESS Fund for compensation of non-household customers to address high electricity prices, and the increased statutory costs for the funds – RAW, NFD and ESS, due to the growth of revenues from electricity sales.

Due to the complicated geopolitical situation in connection with the military conflict in Ukraine, no transport of SNF from WWER-1000 for technological storage and reprocessing in Russia was carried out during the year. In performance of the obligations under the Updated Strategy for Management of SNF and RAW until 2030, the provisions of the Accounting Policies in effect at Kozloduy NPP EAD, and IAS 37, 'Provisions, Contingent Liabilities and Contingent Assets', a provision for SNF management amounting to BGN 24 million was accrued in the current costs for 2022.

During the year, the Company ensured that sufficient liquid resources were maintained, which resulted in all current liabilities being serviced in a timely manner. The Company used its own financial resources to fund all the operating and investment activities.

After authorisation given by the ME in 2022, Kozloduy NPP EAD granted two loans to the BEH EAD, respectively in the amount of BGN 350 million and BGN 38 million.

The nuclear power plant closed the year 2022 without any overdue payments. All due payments for securing the next fuel campaigns of Units 5 and 6, the mandatory insurance and licensing commitments were affected in time. During the year, a total of BGN 5,532 million was contributed to the state and municipal budgets, including BGN 3,181 million in earmarked contributions and BGN 306 million in statutory instalments to the ESS Fund, BGN 643 million in contributions to the NFD Fund and RAW Fund, taxes and fees to the amount of BGN 1,342 million, and BGN 59 million in contributions to social and health insurance funds. Kozloduy NPP EAD paid BGN 890 million dividend to BEH EAD which is 100% of the profit of the nuclear power plant for 2021.

KEY INDICATORS OF THE RESULTS ACHIEVED BY KOZLODUY NPP EAD IN 2022

Indicators (BGN '000)		Statements 31.12.2022	Statements 31.12.2021	Change 2022/2021 (%)
c.1	c.2	c.3	c.4	c.5=(c.4/c.3)-1
1	Total operating income	6,054,894	2,716,914	123%
2	Total operating expense	- 5,243,480	- 1,677,206	213%
3	EBITDA ¹⁾	1,020,271	1,220,079	-16%
4	EBIT ²⁾	811,413	1,039,708	-22%
5	EBT ³⁾	810,304	1,039,126	-22%
6	EBIT margin	13%	38%	-65%
7	EBITDA margin	17%	45%	-62%
8	Total assets	4,041,616	4,072,723	-1%
9	LTA ⁴⁾	2,375,852	2,456,097	-3%
10	Working capital ⁵⁾	1,058,293	1,194,272	-11%
11	Cash and cash equivalents	738,743	914,193	-19%
12	Equity	3,158,761	3,327,343	-5%
13	Return on equity ⁶⁾	26%	31%	-16%
14	Return on assets ⁷⁾	20%	26%	-23%

¹⁾ EBITDA – earnings before interest, taxes, depreciation and amortisation from continuing operations

²⁾ EBIT – earnings before interest and taxes from continuing activities

³⁾ EBT – earnings before taxes from continuing activities

⁴⁾ LTA – long-term tangible assets + expenses on LTA acquisition

⁵⁾ Working capital – current assets minus current liabilities

⁶⁾ Return on equity – EBT/Equity

⁷⁾ Return on assets – EBT/Total assets

SEPARATE STATEMENT OF FINANCIAL POSITION

	31 December 2022	31 December 2021
Assets	BGN '000	BGN '000
Non-current assets		
Property, plant, and equipment	2,375,852	2,456,097
Intangible assets	21,601	22,990
Investment property		4,127
Investments in subsidiaries	22,916	22,166
Loans granted to related parties	28,464	3,670
Financial instruments at fair value through other comprehensive income (OCI)	482	549
Non-current assets	2,449,315	2,509,599
Current assets		
Nuclear fuel	419,062	428,446
Inventory	122,390	112,102
Trade and other receivables	6,278	5,125
Loans granted to related parties	188,351	2,391
Receivables from related parties	98,673	44,625
Income tax receivables	18,804	
Cash and cash equivalents	738,743	914,193
	1,592,301	1,506,882
Assets included in disposal groups classified as non-current assets held for distribution to owners		56,242
Current assets	1,592,301	1,563,124
Total assets	4,041,616	4,072,723

SEPARATE STATEMENT OF FINANCIAL POSITION

(continued)

	31 December 2022	31 December 2021
	BGN '000	BGN '000
Equity and liabilities		
Equity		
Share capital	244,585	244,585
Legal reserves	24,458	24,458
Revaluation reserve of non-financial assets	2,153,877	2,171,928
Remeasurement of defined benefit liabilities	(71,537)	(76,552)
Revaluation reserve of financial assets at fair value	225	285
Other reserves	11,405	21,406
Retained earnings	795,748	941,233
Total equity	3,158,761	3,327,343
Liabilities		
Non-current liabilities		
Retentions on construction contracts	134	97
Financing	90,390	99,182
Pension and other employee obligations	98,267	101,211
Long-term trade and other payables		117
Deferred tax liabilities	160,056	175,921
Non-current liabilities	348,847	376,528
Current liabilities		
Trade and other payables	432,144	227,290
Payables to related parties	4,498	5,156
Financing	7,619	4,319
Retentions on construction contracts	6,842	7,137
Pension and other employee obligations	33,978	30,876
Provision for spent nuclear fuel and others	48,927	24,908
Income tax liabilities		23,287
	534,008	322,973
Liabilities included in disposal groups classified as non-current assets, held for distribution to owners		45,879
Current liabilities	534,008	368,852
Total liabilities	882,855	745,380
Total equity and liabilities	4,041,616	4,072,723

SEPARATE STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME FOR THE YEAR ENDED 31 DECEMBER

	2022	2021
	BGN '000	BGN '000
Revenue from sale of electricity	6,035,000	2,702,696
Revenue from sale of heat energy	3,599	3,556
Revenue from sale of production	6,038,599	2,706,252
Income from sale of services, goods and other sales	4,263	3,155
Income from financing	7,340	3,922
Other income	4,343	3,550
Gains from sale of non-current assets	349	23
Change in the fair value of investment properties		12
Cost of materials	(145,230)	(138,333)
Hired services expenses	(184,487)	(171,206)
Employee benefits expenses	(311,113)	(254,568)
Provisions for defined benefit plans	(30,226)	(29,305)
Depreciation/amortisation and impairment of non-financial assets	(208,857)	(180,859)
Provision expenses	(24,100)	(24,908)
Reversed impairment/ (impairment costs) of financial assets, net	2,824	(430)
Other expenses	(966,472)	(430,824)
Compensations of industrial end-users of electricity	(3,379,239)	(450,000)
Cost of goods and other current assets sold	(996)	(426)
Changes in work in progress	(294)	3,539
Acquisition of machinery, plant, and equipment, self-constructed	4,709	114
Operating profit	811,413	1,039,708
Finance costs	(7,709)	(2,356)
Finance income	6,600	1,774
Profit before tax	810,304	1,039,126
Income tax expenses	(80,841)	(148,822)
Profit for the year	729,463	890,304

SEPARATE STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME FOR THE YEAR ENDED 31 DECEMBER

(continued)

	2022	2021
	BGN '000	BGN '000
Other comprehensive income		
Items that will not be reclassified subsequently to profit or loss:		
Remeasurement of defined benefit liabilities	5,015	63
Revaluation of non-financial assets		287,141
Change in the fair value of financial instruments at fair value through other comprehensive income		
– profit/losses for the current period	(67)	39
Income tax relating to items that will not be reclassified into profit or loss	7	(28,718)
Other comprehensive income for the year, net of tax	4,955	258,525
Total comprehensive income for the year	734,418	1,148,829

SEPARATE CASH FLOW STATEMENT FOR THE YEAR ENDED 31 DECEMBER

	2022	2021
	BGN '000	BGN '000
Operating activities		
Cash receipts from customers	7,207,440	3,264,067
Cash paid to suppliers	(354,929)	(441,685)
Payments to the ESS Fund under a programme of the Council of Ministers to compensate industrial end-users of electricity	(3,181,011)	(450,000)
Cash paid to employees and social security institutions	(310,960)	(265,073)
Paid licences, taxes and other payments to the Nuclear Regulatory Agency	(5,861)	(5,385)
Payments to the RAW Fund, NFD Fund and ESS Fund in accordance with Kozloduy NPP's statutory obligations	(949,890)	(371,709)
Cash flows related to other taxes and payments to the governmental budget and local budgets	(1,177,482)	(429,529)
Cash flows related to insurance policies	(13,892)	(16,135)
Income tax payments, net	(139,287)	(126,966)

SEPARATE CASH FLOW STATEMENT FOR THE YEAR ENDED 31 DECEMBER

(continued)

	2022	2021
	BGN '000	BGN '000
Litigation payments	(25,000)	
Other payments for operating activity, net	(8,191)	(4,264)
Net cash flows from operating activity	1,040,937	1,153,321
Investing activity		
Acquisition of investments in subsidiaries	(750)	(5)
Purchase of property, plant, and equipment	(119,712)	(101,676)
Received and reimbursed financing, net	(6,303)	(6,303)
Proceeds from disposals of property, plant and equipment	5,523	24
Loans granted	(387,865)	
Loan repayments received	176,957	2,300
Dividends received	2,602	770
Interest received	4,317	196
Net cash flows from investing activity	(325,231)	(104,694)
Financing activity		
Repayments of borrowings		(10,879)
Interest paid		(452)
Dividends paid	(890,304)	(607,905)
Lease payments	(240)	(232)
Net cash flows from financing activity	(890,544)	(619,468)
Net change in cash and cash equivalents	(174,838)	429,159
Cash and cash equivalents at the beginning of the year before impairment	914,193	485,106
Expected credit losses of cash and cash equivalents	(612)	(72)
Cash and cash equivalents at the end of the year	738,743	914,193



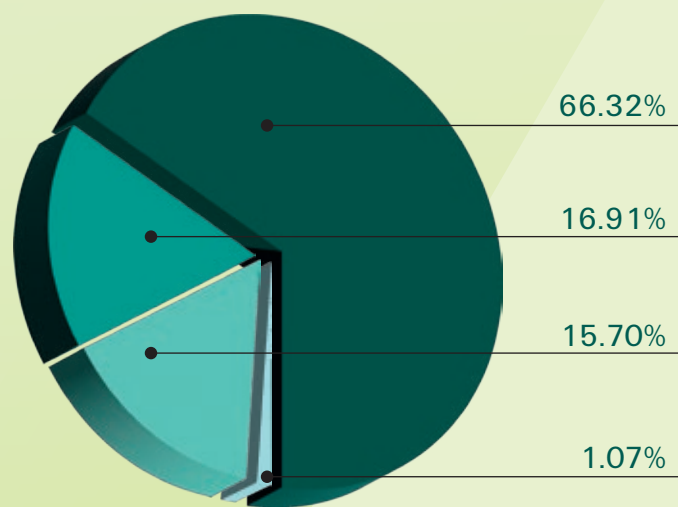
INVESTMENTS FOR STABILITY, RELIABILITY, EFFICIENCY

In 2022, a total of BGN 133,946 thousand were invested under Kozloduy NPP EAD's Investment Programme, provided from the Company's own funds. The value of the long-term assets put into operation throughout the year amounted to BGN 86,350 thousand.

The main share of the expenses (over 83%) was for investments made to maintain and enhance safety, to improve the performance of facilities and equipment to ensure the long-term operation of the nuclear units and for the reliable operation of the reactor installations at power updated to 104%.

The remaining part covers investment costs for energy efficiency, for ensuring the operation of the facilities supporting the production activities, for maintaining and continuously improving the level of physical protection, etc.

REPORTED EXPENSES STRUCTURE AS PER TYPES OF ACTIVITY



- Plant and equipment
- Construction and installation works
- Project related research and studies
- Other

MAINTAINING AND ENHANCING SAFETY

Fifty-nine measures of the 'Programme for Maintaining and Enhancing Safety at Kozloduy NPP EAD' were funded under the Investment Programme. In 2022, BGN 26,029 thousand were invested for costs of activities resulting from inspections or regulatory requirements, as well as based on internal and external operating experience. These include:

- Development of safety analyses for licensing and implementation of an alternative type of nuclear fuel for Unit 5 for operation at 3,120 MW thermal power.
- Update of Level 1 PSA, for full power, low power, and reactor shutdown of both units broadening its scope for internal and external initiating events.
- Upgrade of Unit 5 and Unit 6 surveillance specimen sets to ensure 60 years of operation of the reactor installations.
- Construction of a new power supply system to facilities of the Automated Information System for Off-Site Radiation Monitoring – phase I completed.
- Delivery of containers for transport and storage of SNF from WWER-1000 at the Spent Fuel Storage Facility.

ENSURING UNITS 5 AND 6 LONG-TERM OPERATION

The funds invested for this purpose in 2022 totalled BGN 64,728 thousand. The implemented measures are part of the integrated programmes for safety enhancement of Units 5 and 6, ensuring their long-term operation. The scope of the implemented activities includes a number of projects, among which:



- Migration of the Ovation CICS, implemented at Units 5 and 6, part of the integrated automated process control and management system, to the latest generation of the Ovation-Windows platform in order to extend the service life of the system until 2042, implementation of modifications to the Ovation CICS software design, integration of new functionalities, facilitating the work of operators and reducing the time for maintenance, inspection, adjustment and repair of the equipment. All activities at Unit 6 were completed during the 2022 Outage, and at Unit 5 the activities are due in 2023.
- Installation of the Ovation CICS cybersecurity system at Units 5 and 6 and the Ovation ICS at Auxiliary Building 3 in order to minimise and eliminate the possibility of unauthorised access or compromising computer systems, to ensure adequate computer protection in accordance with the latest requirements and international standards to prevent unauthorised actions, to protect the functionality of information and control systems, and to preserve the reliability, availability and integrity of information.
- Modernisation of the control panels of Units 5 and 6 MCRs and of the FSS-1000. The activities at Unit 6 were completed in 2022, while those at the FSS-1000 and Unit 5 are planned for 2023.
- Procurement of pneumatic cylinders for isolating pneumatic valves on Units 5 and 6 in connection with long-term operation of the units and installation of equipment meeting the increased seismic and safety class requirements.
- Replacement of engineered safety features cabinets on the primary and secondary side, panels with normalising transducers, and power supply panels.



THE IMPLEMENTATION OF THE INVESTMENT PROGRAMME ENSURES THE SAFE AND RELIABLE OPERATION OF KOZLODUY NPP.

ENSURING RELIABLE OPERATION AT THERMAL POWER OF 104%

In 2022, BGN 19,924 thousand were invested in activities regarding the operation of Units 5 and 6 at uprated thermal power. During the year work continued on the projects for:

- Modernisation of Units 5 and 6 neutron flux monitoring system. All civil, installation and commissioning works at Unit 6 were completed and performance tests were carried out.
- Refurbishment of Units 5 and 6 auxiliary systems – installation of equipment with the required scope of parameter control regarding the cooling capacity of the systems.

CURRENT MAINTENANCE OF THE UNITS, AUXILIARY FACILITIES AND INFRASTRUCTURE

In 2022, BGN 23,265 thousand were invested in activities related to maintenance of main and auxiliary facilities, as well as for ensuring the normal operation of common plant facilities supporting the production activity. Some of the funded projects are:

- Modernisation of equipment not covered by the measures within the major investment projects.
- Measures to maintain and enhance the security and physical protection of Kozloduy NPP EAD facilities.
- Phased implementation of measures to enhance the efficiency and quality of the heat supply network in the town of Kozloduy.
- Implementation of construction and repair works at the common plant facilities OSY, BPS, repair of buildings and road surfaces at the Plant site, etc.

Provision of hardware and software products for a higher level of security and greater capability of the Plant information system.





COLLABORATING WITH COLLEAGUES AROUND THE WORLD

The cooperation with various international organisations aims at sharing the best world practices in the field of using nuclear energy for peaceful purposes, and maintaining a high level of safety and reliability of nuclear facilities.

Experts from the Bulgarian nuclear power plant have the opportunity to enrich and share their knowledge and experience through participation in a number of events of the World Association of Nuclear Operators, the International Atomic Energy Agency and the Nuclear Energy Agency at the Organisation for Economic Cooperation and Development.

IAEA

Experts from Kozloduy NPP were included as reviewers in an OSART mission to the Tricastin NPP (France), in a Pre-SALTO Mission Follow-up and in an IAEA expert mission on Knowledge Management, Competence and Human Resource Development for Long-term Operation to Laguna Verde NPP (Mexico). Specialists from the Company participated in numerous in-person and virtual training courses, technical discussions and meetings, consultative meetings and forums. Various topics were addressed, among which 'Reviews of Safety Aspects of Long-term Operation', 'Organisation of Emergency Preparedness for Effective Communication with the Public', 'Integrated Risk Informed Decision Making', 'Waste Minimisation (Optimisation) at Nuclear Power Plant Operations', 'Self-assessment of Emergency Planning Organisation and Use of Emergency Preparedness and Response Information Management System', 'Physical Protection of Nuclear Material and Nuclear Facilities', 'Enhancing the Environmental Radiation Monitoring'. Representatives of the Plant also participated in the Second International Meeting on Equipment Qualification in Nuclear Installations, the Fifth International Conference on Nuclear Power Plant Life Management, the Seventh Review Meeting of the Contracting Parties to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, the Sixty-sixth Regular Session of the IAEA General Conference, meetings of the working groups and the Steering Committee for Phase 6 of the Agency's International Generic Ageing Lessons Learned (IGALL) Programme.

In 2022, preparatory activities were initiated in connection with the IAEA SALTO Follow-up mission in June 2023 and the large-scale OSART (Operational Safety Review Team) mission planned for late 2024.



WANO

In February 2022, a workshop on ‘Leadership in Nuclear Energy for Plant Shift Supervisors, Unit Shift Supervisors and Shift Supervisors’ was held at Kozloduy NPP. It was organised by WANO-Moscow Centre under the Industry Learning & Development Programme. The concept of the leadership in the nuclear energy, which was adopted by WANO based on the best practices and recommendations of the members of the Association, was presented. Video recordings made during the workshop and other course materials will be incorporated into training courses conducted by the NPP’s Training Centre.

Kozloduy NPP hosted a meeting of the working group of WANO-Moscow Centre Regional Crisis Centre last September, which was attended by representatives from all Regional Crisis Centre member states – Bulgaria, Armenia, the Czech Republic, Slovakia, Hungary, Russia, Iran, Finland, India, Belarus, the Republic of Türkiye and China. The experts discussed the activities of the RCC, got acquainted with the overall organisation of emergency planning at Kozloduy NPP and shared their national experience in this field.

In 2022, Bulgarian nuclear experts participated in peer review teams at Trillo NPP (Spain), Loviisa NPP (Finland), Mochovce NPP (Slovakia), Sendai NPP (Japan) and the Armenian NPP, as well as in member support missions at Akkuyu NPP (the Republic of Türkiye), the Armenian NPP and Mochovce NPP. Joint IAEA-WANO Technical Meeting to Share Operating Experience was held in the Turkish mega-city of Istanbul with the participation of Plant specialists where current challenges and best practices in improving the effectiveness of operating programmes implemented in nuclear power plants were discussed. Experience exchange meetings were also held at Bohunice NPP (Slovakia), Temelin NPP (Czech Republic), Paks NPP (Hungary).

Within the year the Company started the implementation of the Programme for Preparation of Kozloduy NPP EAD for the WANO-MC Follow-up Peer Review in 2023, the purpose of which is to assess the degree of implementation of the recommendations of the main mission conducted at the end of 2021.



THE PARTICIPATION IN INTERNATIONAL EVENTS BROADENS KOZLODUY NPP EXPERTS’ KNOWLEDGE AND EXPERIENCE.



OECD NEA

Following Bulgaria's accession to the NEA in 2021, the nuclear power plant specialists have actively participated in the organisation's initiatives, which is particularly important given the country's ongoing application process for OECD membership.

In July 2022, the Workshop on Radioactive Waste Management and Stakeholder Engagement was held in Brasov, Romania, under the auspices of the Nuclear Energy Agency where experts from four continents shared their experience. The Bulgarian delegation included representatives of the Ministry of Energy, Kozloduy NPP, SE RAW, NRA, BEH EAD, INRNE at BAS, as well as NPP scholarship-holders from the Technical University - Sofia.

The NEA Risk Communication Training Course, held in December in Bratislava, the capital of Slovakia, brought together specialists from Bulgaria, Belgium, the Netherlands, Portugal, Ukraine, the UK, Canada, Japan, Poland, Spain, etc. The objectives and challenges of risk communication were reviewed and its components defined. The topics of how audiences use information, how to assess risk perceptions and how to build trust were also addressed.





DEVELOPING HUMAN CAPITAL

The Company maintains the required number of properly qualified and highly motivated personnel. Continuous learning and qualification enhancement, as well as provision of career development opportunities are among the priorities of human resource development. Managers and employees are driven by the conviction that the personal input, professionalism and commitment of each team member are a guarantee for the successful accomplishment of the goals set for the Company.

HIGH LEVEL OF PREPARATION

The requirements for the nuclear power plant personnel are based on the national and international regulations establishing the necessary conditions to ensure the safe operation of the nuclear facilities. The selection of the required specialists with appropriate education, maintaining the knowledge and skills of the employees and ensuring their retention and transfer to new recruits are among the main objectives of the Company. 61% of the Plant employees have a university degree, while 27% have a vocational secondary education. In 2022, 244 people were newly-employed, 55% of whom are university graduates.

SUPPORTIVE WORK ENVIRONMENT

Kozloduy NPP strives to provide the excellent conditions for employees so that everyone can express and develop their potential from the moment of appointment until the end of the employment relationship. Equal rights and opportunities for work and development are provided. Career management is a key factor for both driving sustainable employee performance and managing change and achieving set strategic goals. Career development is based on the acquired qualification and experience, demonstrated initiative, personal talents and achievements. In 2022, 156 specialists changed the positions they held to ones requiring a higher level of responsibility. The level of employee motivation is subject of annual surveys that track the impact of 24 work environment factors.



TRAINING AND QUALIFICATION

Kozloduy NPP maintains a training and qualification process aimed at providing licensed, competent and motivated personnel, establishing and maintaining a high level of safety culture, effective use and management of personal and corporate knowledge, stimulating the acquisition of the necessary knowledge and skills, development of positive attitude towards work. A systematic approach is applied in which the training materials are developed and presented within a logical, step-by-step process based on the work tasks performed and related competencies, knowledge, skills and attitude necessary for the implementation of the work duties. The scope, topics, settings and sequence of the training are defined in initial and continuing training programmes and training time schedules.

The nuclear plant holds a licence issued by the NRA for performing specialised training for activities at nuclear facilities, and activities with sources of ionising radiation. The Company has a Training Centre with a variety of facilities for theoretical, practical and simulator training. The ESTRA on-line training platform is also being developed. Specialised on-the-job training is also conducted in various forms. In 2022, the total number of trainings delivered was 3,132 training courses at the TC, 1,427 on-the-job trainings, and 167 hands-on trainings in laboratories, workshops, mock-ups, etc. Training was delivered to 3,135 employees of the Plant and 3,438 individuals from 170 different external companies and organisations. Forty individual licences for working in nuclear facilities and 31 individual licences for working with sources of ionising radiation were issued.

In order to ensure the efficiency of the practical training conducted at the TC, the training aids (mock-ups) are maintained in conformity with the existing equipment at Kozloduy NPP. In 2022, work on the construction project for new premises for practical training of operations and maintenance staff, as well as for upgrading of the existing ones, continued. The aim is to ensure full compatibility of the facilities with those used at the Plant, to extend the scope of practical training and to increase the number of those acquiring specific practical skills.

The full-scope simulator is a high-tech facility for specialised initial and continuing training of operations personnel performing functions for nuclear safety assurance and control. The FSS-1000 is maintained in compliance with the current state of Unit 6 which is the reference unit, with 43 configuration changes implemented in 2022. The most significant ones are the replacement of the control panels on the mock-up MCR and the migration of the modelled Ovation CICS to a new state-of-the-art platform. During the year, initial, continuing and extraordinary specialised trainings of Units 5 and 6 control room operator crews and two general emergency drills were conducted at the FSS-1000 according to the time-schedules.



KOZLODUY NPP APPLIES A SYSTEMATIC APPROACH TO TRAINING.



LOOKING AHEAD

The issue of ensuring continuity between different generations of nuclear power operators is particularly important in the context of the long-term operation of Units 5 and 6. In this regard, Kozloduy NPP has been working consistently to support young people already in the period of their professional orientation and also after they become part of the Company's team in the process of their career development. The aim is to encourage more capable and ambitious pupils and students to choose specialties applicable at the Plant and, after completing their studies, to choose the Plant as a place for their professional development, where they can acquire the vast array of specific knowledge and best practices accumulated over decades of operation.

In 2022, 177 people participated in the Plant's youth focused programmes, a 30% increase compared to 2021. This includes the students who have earned good grades and receive scholarship from the Plant and who study at 'Maria Sklodowska-Curie' VSNE - Belene, 'Igor Kurchatov' VSNE - Kozloduy, and 'Vasil Levski' Vocational School - Miziya, the vocational high school students in Kozloduy and Miziya studying in dual form, the Plant scholarship holders from the Technical University - Sofia and 'St. Kliment Ohridski' Sofia University, as well as the students who had paid and unpaid internships at Kozloduy NPP.

In order to promote nuclear energy as a promising sector for professional development, the nuclear power plant regularly participates in career orientation events. In 2022, the opportunities the Company provides in this relation were presented at 8 career forums organised by the technical universities in Sofia and Gabrovo, 'St. Kliment Ohridski' Sofia University, University of Chemical Technology and Metallurgy, and 'St. Ivan Rilski' University of Mining and Geology. Special attention was also paid to the students from the secondary schools in the region of the NPP in the framework of the spring and autumn edition of the 'Educational Panorama', held as an initiative of Kozloduy Municipality.

The natural generational transition of the Kozloduy NPP workforce happens under precise supervision and management. The experience and competences possessed by the staff are the object of evaluation and analysis, with efforts focused on retaining existing knowledge and continuously accumulating information and knowledge in specific areas of strategic and technological importance. Core competencies are identified and specific measures are taken to retain them, whereby the Company ensures the preservation of this valuable asset.



THE YOUTH FOCUSED PROGRAMMES OF THE PLANT ATTRACTED 30% MORE PARTICIPANTS COMPARED TO 2021.





OPENNESS AND RESPONSIBILITY

The Global Compact principles and the United Nations Sustainable Development Goals are an integral part of Kozloduy NPP business practices. As a socially responsible company, Kozloduy NPP provides occupational health and safety, human resource development, implementation of anti-corruption practices, care for nature, support for the local community and socially significant initiatives.



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THE KEY TEAM VALUES -
PROFESSIONALISM,
RESPONSIBILITY, STRIVING
FOR EXCELLENCE.



RESPONSIBLE EMPLOYER

The nuclear power plant has established a positive working atmosphere, it provides modern workplaces ensuring safety and health, and professional development is based on education, personal qualities and performance. More than one third of Kozloduy NPP employees are women, holding positions in all units of the Company, including responsible operator and management appointments. Attracting young professionals to ensure the safe and reliable operation of the Plant for the decades to come is a priority.

The key values of Kozloduy NPP's organisational culture are professionalism, personal responsibility, and striving for excellence. Their significance for the overall success is strongly emphasised both by internal communication campaigns and the celebration of the Day of the Power Engineer. Every year, on this day, the most outstanding individuals in 10 professional areas are announced as well as the team which has won the 'Safety First' prize for collective contribution for achieving a high level of safety culture and leadership at the workplace.

SUPPORTING SOCIALLY SIGNIFICANT CAUSES

Kozloduy NPP consistently supports a number of causes that are important for the whole society. In 2022, the Company and its employees participated in the implementation of charity initiatives focused on supporting accommodation centres for children and adults in the region, campaigns to help the people in need, etc. The children's section of the library at the 'Razvitie 1869' Community Cultural Centre in Vratsa has been renovated with the donation support of the nuclear power plant. The 'Bulgarian Christmas' national initiative received the funds raised during the charity solo performance of Mihail Bilalov, delivered in December 2022 at the House of Culture in Kozloduy.

FOR POSITIVE CHANGE

As an active member of the Bulgarian Network of the UN Global Compact, the Plant implements the ten universal principles of the Compact in its activities. The 'Communication on Progress' report published on an annual basis, available on the Kozloduy NPP website, shows the process of how this is practically implemented. The Company and its employees were also actively involved in the events organised by the Bulgarian Network – forums, webinars, information campaigns, etc.

CARING FOR THE LOCAL COMMUNITY

The nuclear power plant has been following a long-standing policy of close cooperation with local authorities which has resulted in projects in the areas of public works, infrastructure, health, education, culture and sports which are beneficial for the community. The Company maintains two important facilities in Kozloduy – the House of Culture and the Sports and Recreation Centre. Various initiatives are focused on the youngest members of the local community to develop their cultural and sport needs – children’s tournaments, festivals, stage events are organised. With the support of Kozloduy NPP, a number of projects have been implemented with a focus on good education and the high level of training of the students from the region, one of the successful forms of fruitful cooperation being the opening of dual training classes in the vocational high schools of Kozloduy and Miziya.



COMMITMENT TO ENVIRONMENT

Striving to implement green alternatives, Kozloduy NPP has been developing an environmentally friendly transport model using electric cars, electric trucks and charging infrastructure on-site and in the town of Kozloduy.

In 2022, once again, Kozloduy NPP employees were part of various initiatives such as the Earth Hour, Forest Week, International Danube Day, European Mobility Week. The World Environment Day, whose slogan for 2022 was ‘Only One Earth’, was celebrated with various events where the eco-commitment of the nuclear power industry was reaffirmed: the restored in 2020-2021 children’s playgrounds at the park of Kozloduy were cleaned and improved, another red-leaved sycamore tree was planted in the Ecology Alley in front of Kozloduy NPP Sports and Recreation Centre, and a landscape photography competition ‘The Beautiful Nature of Bulgaria’ was held at the Plant. Kozloduy NPP employees and their family members took part in the competition with 126 photos, the most impressive of which were included in the Company’s calendar for 2023.

The Plant was awarded third prize in the Green Initiative category of the 12th national competition ‘The Greenest Companies in Bulgaria’ for its efforts to maintain the employees' personal commitment to environment. The competition promotes socially responsible businesses that operate sustainably taking care of nature.



OPENNESS AND COMMUNICATION

Kozloduy NPP maintains continuous communication with all stakeholders - internal audience, state and regulatory bodies, local authorities, international organisations, general public, the media. In fulfilment of its commitment to openly provide objective and timely information on all aspects of its activities, the Company issues printed publications, maintains a corporate intranet and internet website, and a profile on one of the social networks. Particular attention is paid to the target group of pupils and students - the NPP's goal is to direct young people to technical specialties, to stimulate them for high quality preparation in the process of education and to attract the best ones to its team.

Visits to Kozloduy NPP have been resumed following the end of the nationwide epidemic restrictions. A total of 1,582 guests from the country and abroad visited the Plant during the year. The number of visitors on the Open Doors Day alone, held on 4 June with expectedly strong interest, was 550, about a quarter of which were children and young people. The initiative provides many of the guests with the chance to see up close where their relatives and friends work, whereas Kozloduy NPP employees can share with them their pride in being part of the team of the country's largest power generating company.



LIST OF ABBREVIATIONS USED

BAS	Bulgarian Academy of Sciences
BEH EAD	Bulgarian Energy Holding EAD
BPS	Bank Pumping Station
CICS	Computer Information and Control System
CM	Council of Ministers of the Republic of Bulgaria
EC	European Commission
ESS	Electricity System Security
EU	European Union
ExEA	Executive Environment Agency
EWRC	Energy and Water Regulatory Commission
FSS-1000	Full-Scope Simulator for WWER-1000 Reactors Units
IAEA	International Atomic Energy Agency
ICS	Instrumentation and Control System
INRNE	Institute for Nuclear Research and Nuclear Energy
IRS	Ionising Radiation Sources
MCR	Main Control Room
MEW	Ministry of Environment and Water
MH	Ministry of Health
MRDPW	Ministry of Regional Development and Public Works
NCRRP	National Centre for Radiobiology and Radiation Protection
NEA	Nuclear Energy Agency
NFD	Nuclear Facilities Decommissioning
NRA	Nuclear Regulatory Agency
OECD	Organisation for Economic Co-operation and Development
OHS	Occupational Health and Safety
On-site FSCP – Kozloduy NPP	On-site Fire Safety and Civil Protection Service at Kozloduy NPP
On-site RPO	On-site Regional Police Office at Kozloduy NPP
OSY	Open Switchyard
PSA	Probabilistic Safety Assessment
RAW	Radioactive Waste
RCC	Regional Crisis Centre
RD FSCP	Regional Directorate of Fire Safety and Civil Protection
RIEW	Regional Inspectorate for Environment and Water
SAMTS	State Agency for Metrological and Technical Surveillance
SC	Safety Culture
SE RAW	State Enterprise Radioactive Waste
SFP	Spent Fuel Pool
SFSF	Spent Fuel Storage Facility
SNF	Spent Nuclear Fuel
TC	Training Centre
VSNE	Vocational School of Nuclear Energy
WANO	World Association of Nuclear Operators
WMA	Waste Management Act
WWER	Water-Water Energy Reactor



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