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Major milestones in the project's history

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Dear colleagues and friends,

In the year of its 30th anniversary, the Caspian Pipeline Consortium marked Oil and Gas Industry Workers' Day with another round of modernization milestones. A new single point mooring has been commissioned at the Marine Terminal. At PS Komsomolskaya, construction and installation work has begun under the EPS Programme to replace gas-turbine-driven main pump units with electric-motor-driven MPUs. We are delivering on our production tasks and plans in an environment complicated by external pressures, which makes these results all the more valuable to every one of us.

Over the years, and under a range of geopolitical conditions, the pipeliner`s profession has repeatedly proven its worth and uniqueness. Equipment and control technologies keep advancing, and artificial intelligence is being entrusted with ever more complex tasks, but people in this sector of the fuel and energy industry will always be needed and in demand – to make responsible decisions, to oversee automated systems, to handle non-standard tasks, and to ensure the reliability and safety of highly complex systems. CPC is no exception here, and the human factor will always be a priority for the company, along with safe working conditions and social protection.

One hallmark of our anniversary year has been our education initiatives – in career guidance, teaching, and environmental awareness. Drawing on their own practical experience, CPC experts hold talks in Russian schools about the specifics of industry professions. With Consortium funding, schools in Atyrau Region are being equipped with chemistry classrooms and laboratories that actively spark students' interest in the professions most in demand in Kazakhstan's leading oil region – laboratory technician, process engineer, chemical engineer. These school career-guidance initiatives have already earned positive feedback from specialized universities, including Gubkin University.

The twin cities of Atyrau and Astrakhan have supported each other and exchanged experience for many years. The latest step in this cooperation was a CPC-backed internship for Kazakhstani teachers of Russian language and literature in Astrakhan – a project jointly developed by the education ministries of Russia and Kazakhstan. We should also mention our environmental education project, Protect Nature of Our Native Land, now in its second decade of operation across CPC's regions of presence. It's fair to say the quality of the master classes, competitions, contests, and the books and albums produced under the project reached a new level this year, driving greater audience interest and creative output. Experts at the CPC for Talented Children international festival, dedicated to the Year of Unity of the Peoples of Russia, also noted an improvement in the young contestants' performing skills.

As always, our main professional holiday is an occasion to take stock of what has been achieved, how effective our efforts have been, and how much work has been completed. Behind these results lies the dedicated work of our company's close-knit, multinational team, and the enthusiasm and high professionalism of every team member. Much has been accomplished, and just as much lies ahead. To meet these tasks successfully, I want to wish every one of us a solid foundation to rely on: good health and harmony, happiness at home, and the support of family and friends. I wish you good luck in everything, and new achievements and successes!

N. N. Gorban
General Director
Caspian Pipeline Consortium

IAOT in Qingdao

The XXVIII meeting of the Board and General Assembly of the International Association of Oil Transporters (IAOT) took place in Qingdao, China, on June 22–24, 2026. Participants included representatives of Transneft, KazTransOil, Gomeltransneft Druzhba, MOL Group, KKT LLP, China National Petroleum Corporation (CNPC), Sino Pipeline International, CPC, and other companies.

Meeting participants approved IAOT's 2025 financial statements and audit report, and agreed on amendments to the association's founding documents based on the outcomes of the Strategic Roundtable held in Astana on May 23, 2026.

The meeting heard reports on the work of all standing expert groups and the IAOT Center for Professional Skills Development. CPC General Director Nikolay Gorban presented the results of the Safe Work Culture discussion platform, established in 2025. The platform demonstrated strong potential: IAOT meeting participants approved elevating its status to that of another standing working group within the association. Participants also backed CPC's initiative to harmonize methodological approaches to developing Safe Work Culture at IAOT member companies – aligning terminology, metrics, reporting formats, incident classification, and the exchange of lessons learned from incidents.

Participants were briefed on the results of the International Youth Scientific and Technical Conference held by Transneft and IAOT member organizations, and on preparations for the "Best in Profession" International Professional Skills Competition planned for 2027.

The Board backed an initiative from Chinese colleagues and CPC's General Director to develop common standards and recommendations for applying artificial intelligence and automation technologies at oil and gas pump stations, and to form a working group to draw on IAOT member companies' experience across different jurisdictions.

As part of the XXVIII IAOT Board and General Assembly meeting, participants visited the oil and gas transportation laboratory at the China University of Petroleum, and toured Dongjiakou Port and the Qingdao Port automated terminal's unmanned technologies.

First External Surveillance Audit

Between May and June 2026, the Caspian Pipeline Consortium successfully completed its first external surveillance audit of its Health, Safety, and Environment (HSE) management system, confirming compliance with the international standards ISO 14001:2015 and ISO 45001:2018.

At CPC-R, the audit was carried out by RT-Tekhpriemka JSC on behalf of the certification body EUROCERT S.A., which holds internationally recognized ESYD accreditation (Greece). The auditor for CPC-K was DEKUES LLC, acting on behalf of the certification body DKS RUS LLC, which holds internationally recognized NABCB accreditation (India).

External experts conducted spot inspections of CPC-R facilities in the Russian Federation and CPC-K facilities in the Republic of Kazakhstan, reviewed documented information, and interviewed managers and specialists. The Eastern Region was inspected from May 5 to 8, 2026, the Western and Central Regions from May 19 to 21, 2026, and the Moscow office from June 1 to 2, 2026.

Following the audit, external experts noted that the Consortium demonstrated a mature, effectively functioning HSE management system, along with a commitment to its continuous improvement.

EURO CERT

CERTIFICATE

СЕРТИФИКАТ

JSC "CASPIAN PIPELINE CONSORTIUM-R"

АО "КАСПИЙСКИЙ ТРУБОПРОВОДНЫЙ КОНСОРЦИУМ-Р"

ISO 14001:2015

OPERATION OF OIL PIPELINE SYSTEM FOR THE PURPOSES OF CRUDE OIL TRANSPORTATION AND LOADING TO TANKERS IN THE BLACK SEA WATER AREA.

ЭКСПЛУАТАЦИЯ НЕФТЕПРОВОДНОЙ СИСТЕМЫ С ЦЕЛЬЮ ТРАНСПОРТИРОВКИ ТОВАРНОЙ НЕФТИ И ОТГРУЗКИ НЕФТИ НА ТАНКЕРА В АКВАТОРИИ ЧЕРНОГО МОРЯ.

July Maintenance

On July 8, 2026, the CPC pipeline system resumed oil pumping after a planned 12-hour shutdown. During this period, scheduled maintenance was carried out on various pipeline systems, pump stations, and the Marine Terminal. Repair work was completed, and activities under CPC's current and capital projects were carried out.

In the Republic of Kazakhstan, scheduled work was carried out at PS facilities and on the linear section. Six defects were repaired on the linear section. Branch pipes were replaced at the pig launcher/receiver station near PS Kurmangazy. A ball valve was replaced at PS Tengiz. Drain valves were replaced at the mainline block valve station near PS Atyrau.

In Astrakhan Oblast and the Republic of Kalmykia, the leak tightness of four mainline block valves (MLBVs) was checked on the linear section. Three defects were repaired using repair sleeves. A vent valve was installed on the inlet header.

At pipeline facilities located in Stavropol and Krasnodar Krai, the leak tightness of four ball valves was checked. Drain line valves were replaced at PS-8.

At the CPC Marine Terminal, work during the planned July shutdown covered both primary and auxiliary equipment – emergency diesel generators, shutoff valves in the Tank Farm's and Shore Facilities' pressure control systems, the multipurpose tank, the Shore Facilities' pig launcher/receiver chamber, and other equipment.

Twelve-hour planned shutdowns, along with planned shutdowns of other durations, are scheduled by the Consortium well in advance, with timing agreed with shippers. This information is also factored in by Kazakhstan's Ministry of Energy when drawing up the oil transportation schedule for the Tengiz–Novorossiysk pipeline. This ensures the planned, orderly operation of all participants in the process of producing and transporting oil via the CPC pipeline.

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Pavel Kretov

Deep-Water Build

In August 2026, installation of a new single point mooring – SPM-2 – was completed at the CPC Marine Terminal. The equipment passed hydraulic testing successfully and was brought into operation

The atmosphere at the pipeline's Operation Control Centre (OCC) that day was lively and celebratory. Gathered at the monitors were CPC General Director Nikolay Gorban, Technical Director Igor Lisin, Head Dispatcher Igor Mishchenko, and Tanker Loading Dispatcher Vyacheslav Tsys.

"All installation work on SPM-2 has been fully completed", the Technical Director reports. "The unit has been installed as per design, and commissioning and hydraulic testing have both been completed successfully. SPM-2 is ready to begin Comprehensive Testing with live oil".

"The tanker is moored and has reported it's ready to begin loading. The process pipelines and Shore Facilities equipment are ready. Permission to proceed?" the Head Dispatcher asks.

"Loading approved!" the General Director orders.

The tanker loading dispatcher clicks the mouse, and the first tanker in SPM-2's history begins filling through the unit's cargo system.

The Optimal Route

Work on installing SPM-2 began in 2025, when contractors placed caisson anchors on the seabed. Work continued in Novorossiysk in 2026.

SPM-2 arrived at Russia's southern sea gateway in March, delivered from the shipyard aboard the cargo vessel St. Sofia.

"We planned for every contingency, choosing our route and speed to avoid areas of bad weather", says Andrei Bogdanov, St. Sofia's chief mate, describing the voyage. "The cargo was tall, so we checked the lashings twice a day. We made it safely through areas with heavy pirate activity".

The single point mooring was first delivered to the Novorossiysk Ship Repair Yard (NSRZ). The high-value cargo

was received by specialists from CPC and from Kazakhstan's KMG Systems & Services, the company responsible for the turnkey project – from procuring components to delivering the SPM to Novorossiysk.

"Installing the SPM is an important project for Kazakhstan", says Aidar Orzhanov, Deputy General Director of KMG Systems & Services LLP. "About 80% of Kazakhstan's oil exports are transshipped through units like this one. The manufacture, transport, and installation of the new SPM met the requirements of all CPC shareholders – Chevron, ExxonMobil, Transneft, LUKOIL, and Rosneft".

"Unloading the SPM took us three days", explains Dmitry Sokolov, Development Director at Smartlog, the company that handled the SPM's transport and led the unloading operation. "We started by unloading the buoy, then the chains, containers, hoses, and manifold. We worked around the clock, and our biggest enemy was the southerly wind. The containers have a lot of surface area for the wind to catch, which makes them hard to move from ship to pier in strong gusts".

SPM-2 arrives aboard St. Sofia

Another risk factor was backwash at the first berth, so the SPM was moved to a safe area right away, before nightfall.

At the same shipyard, Alliance LLC – the contractor for offshore operations – was preparing an installation barge fitted with a 1,350-tonne crane, the same one used the previous year to install the caisson anchors. The crane is removed from the barge in the off-season; over the winter, it had been in use on construction work at a refinery in Krasnodar Krai.

Anchor chain segments on Nefrit's deck

All for One, One for All

Once again, as in the previous year, the support vessel Nefrit, equipped with a dynamic positioning system, was coupled to the barge. This sophisticated suite of navigation and control equipment lets Nefrit hold a set position automatically and with high precision, even in poor weather, using only its own thrusters and no anchors. The vessel's other key role was launching and monitoring the remotely operated underwater vehicle (ROV).

After dismantling the previous SPM systems and repositioning equipment, Alliance LLC, the offshore operations contractor, moved on to installing the new equipment. These stages accounted for the largest share of diving work. Given the situation in the Black Sea, the decision was made not to use a saturation diving system, which would have let divers remain in the underwater work zone around the clock. Instead, the team used a "carousel" scheme, in which one diver works for 40 minutes at a depth of 60 metres and then spends an hour and a half surfacing with decompression stops, while a partner descends in advance to take over.

"Everyone on the project worked in close coordination", notes Alexei Milovantsev, General Director of Alliance LLC. "Whenever one diver was underwater, 90 specialists on the vessel were supporting that work".

Open day during commissioning

The project involved 27 divers working across four stations – two day shifts and two night shifts. Between six and ten dives were carried out each day, with each diver making one dive per shift.

"We carried out various types of underwater work – welding, cutting, dismantling", says Alexander Kologur, a specialist with the European Diving Company of St Petersburg, having just surfaced after completing another task. "We used a range of specialised tools designed to work underwater. We started by extending the

Nefrit carries out a series of underwater operations integrating SPM-2 into the Marine Terminal's infrastructure

FIGURES

1,350 t –
lifting capacity of the installation barge's crane

124 t –
weight of the subsea manifold

5 t –
weight of a subsea hose section

300 m –
length of the additional anchor chain segments

50 t –
weight of the additional anchor chain segments

27 divers –
diving team

60 m –
depth of the diving operations

40 min –
time a diver spends at depth

1.5 hrs –
diver ascent with decompression

anchor chains, lowering six segments with a crane – 300 metres long in total and weighing 50 tonnes altogether".

The Most Labour-Intensive Operation

Setting a new single point mooring on its anchors isn't enough – it also has to be fully integrated into the CPC Marine Terminal's transshipment infrastructure. One of the most labour-intensive operations was installing a pipe spool between the subsea pipeline and the new manifold. The old spool had to be removed and a new one installed with precise alignment.

"Picture a pipe spool with a complex geometry, a metre in diameter and 17 metres long, that has to be fitted between flanges at a depth of 60 metres, with the dimensions matching exactly", explains Yuri Belov, Head of CPC's Construction Office. "In preparing for this underwater task, we and the contractor built a mock-up of the spool's profile and trained on it".

For safety, the pipeline was first cleared of oil and flushed with water, and a self-propelled remotely operated pig was then sent inside (its successful trials and subsequent work at the Marine Terminal were covered in the February 2025 issue of CPC Panorama). The pig travelled to the designated point and installed a reliable, self-sealing plug there for the duration of the SPM replacement work.

The new SPMs have one important design difference from the units used previously. In the past, buoyancy tanks – hollow cylinders filled with air – were used to hold the subsea hoses in the required configuration. As we may recall, these had to be replaced ahead of schedule during the exceptionally difficult hydrometeorological conditions of 2022. With the new SPMs, this will no longer be an issue.

SPM-2 is lowered into the water from the NSRZ pier

Ample space inside SPM-2

“Technology moves forward”, says Oleg Likhomanov, Head of the Construction Service for the single point mooring replacement project. “Instead of tanks, we now use special floats fitted directly onto the hose at specific points. Their buoyancy keeps the subsea line in the correct profile. The function is the same, but the method is more advanced”.

There is also a benefit for dispatchers operating the new SPM: they will now receive more information about underwater conditions around the unit. An oceanographic station – a specialised, battery-powered sonar – has been mounted on the subsea manifold frame. This device will transmit real-time data on wave force and current speed in the Marine Terminal’s waters to the OCC.

Built With Russian Components

The tanker Aegean Dream (shipper: Tengizchevroil LLP) took on 127,000 tonnes of CPC Blend crude from the new SPM-2. From that day, CPC once again has three fully operational single point moorings and can run them simultaneously if needed. The previous SPM-2, in fact, had been put out of action by a terrorist attack the previous November. Given both the scale of the job and the external circumstances involved, the team replaced the single point mooring fairly quickly.

“This was a unique experience – everything was carried out by

The new SPM-2 loads oil onto the first tanker

Russian specialists alone, with no foreign involvement”, says CPC General Director Nikolay Gorban, assessing the project’s significance for the company. “No Russian company had ever before carried out the installation, commissioning, and start-up of single point moorings. I’m grateful to the entire CPC team and the contractor’s staff for bringing the equipment into operation on schedule, safely, and with strong technical expertise, despite the difficulties linked to the well-known situation in the Black Sea”.

“Specialists from the manufacturer, who would normally be present on site during installation, oversaw the work remotely this time, but that had no effect on quality”, notes CPC Technical Director Igor Lisin. “The new SPM’s communication and control systems follow the same design used on mooring units previously installed by foreign companies, but now all the components are Russian-made”.

The new equipment has been tested and successfully integrated into CPC’s existing pipeline communication and control system. Once the Consortium switches over from SCADA to its domestic dispatch control and management system, control of the new single point mooring will also be transferred to that system.

The new SPM has a more modern design than the units that have been in service since 2001. One example is the enclosed design of the swivel mechanism, which improves operational safety. The new single point mooring’s contribution to the Marine Terminal’s operations will help deliver on CPC’s core mission: the reliable, stable supply of oil from Caspian basin fields to world markets.

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Construction Site No. 1

In midsummer, representatives of CPC's shareholder companies visited two pump stations, located in Astrakhan Oblast and the Republic of Kalmykia. The site visit focused on the implementation of long-term investment projects, primarily the EPS Programme

The pilot project under the EPS Programme is currently under way at Komsomolskaya PS. As a reminder, it involves replacing gas-turbine-driven main pump units with Russian-made MPUs fitted with electric motors, and switching a number of pump stations to external power supply.

On the first day of the visit, shareholder representatives – specialists from Transneft, KazMunayGas, Chevron and other companies – toured Astrakhanskaya PS. Because this station has a similar set of recently built facilities under the Debottlenecking Programme (DBNP) to Komsomolskaya, the visitors were able to get a clear picture of the work ahead. The experience of joint coordination and planning gained during the DBNP by specialists from the Capital Construction Department, the Operations Department and the Corporate Security Division is now being applied to the EPS Programme at the station in Kalmykia.

Both Astrakhanskaya and Komsomolskaya sit on a section of the CPC pipeline laid back in the Soviet era. Under the Consortium's plans, the section is being progressively upgraded: around 30 km of the pipeline's linear section near the station has recently been replaced. The condition of the section is closely monitored using modern in-line inspection methods, not least because it includes the largest underwater crossing on the CPC route through the Volga-Akhtuba floodplain – 26 km between valves.

Of the original Astrakhanskaya PS, built in 1989, only three buildings remain. Under the DBNP, 90% of the station's production area has been rebuilt. New facilities here include a modern main pump house (connected to the pipeline system in November 2022), a variable frequency drive (VFD) area, an indoor switchgear (ISG) building for 0.4 kV and 10 kV, a package transformer substation, a foam generator unit, and other structures.

Shareholder representatives discussed the experience gained from the Expansion Project and the DBNP, receiving detailed comments from Operations Department specialists on further operating practice for the equipment, buildings and structures.

Visitors inspected the spare parts warehouse at Astrakhanskaya PS

"VFD equipment made in Cheboksary has proven highly reliable in practice", said Sergei Nosov, Astrakhanskaya PS Manager. "It keeps the oil pumping units running even through power dips lasting up to five seconds".

The visitors paid particular attention to the metering units (LACT), since Astrakhanskaya PS serves as a "customs point" for oil moving into Russia from Kazakhstan. The station has six measurement lines fitted with ultrasonic flow meters with a maximum capacity of 11,000 m³ per hour: four main working lines and two standby lines. The delegation inspected the launcher/receiver (L/R) unit for cleaning and diagnostic tools and reviewed the operation of the drag reducing agent (DRA) injection equipment.

One topic discussed by shareholder representatives with the station's workforce was the construction of a workers' camp.

"It takes an hour and a half to drive from Astrakhan to the station", said Konstantin Rybak, Head of the Regional Operations Division. "That's without traffic in the city or on the highway – with it, it takes even longer. Switching to a rotational work schedule could significantly improve the work-life balance for all Astrakhanskaya PS employees and, in turn, boost productivity".

Preparations for Autumn

The following day, participants in the CPC site visit and shareholder representatives toured Komsomolskaya PS in the Republic of Kalmykia. Under the EPS Programme, vertical grading work has been completed here, foundations for future buildings and structures are 95% ready, and work is actively under way to install cable rack supports. Assembly of the main pump house, VFD, ISG, package transformer substation, foam generator unit and drainage tank pads is due to begin in the autumn.

Contractors intend to complete all concrete work while air temperatures remain above freezing. Unlike the foundation for the main pump station, the foundation for the indoor switchgear requires two-stage concreting: first

The new main pump house at Astrakhanskaya PS, commissioned in 2022

Before the cold weather sets in, builders must complete the thermal envelope of the EPS buildings at Komsomolskaya PS

the lower slab of the technical basement is poured, followed by the columns and the main monolithic slab.

"Work is currently proceeding on schedule for the EPS Programme. Progress and other matters are discussed with shareholder representatives on a monthly basis at meetings on long-term investment projects", said Dmitry Medvedovsky, CPC Deputy Technical Director for Engineering, during the site tour.

Design and technical supervision representatives are permanently on site at EPS Programme facilities. Construction participants hold technical meetings every week, at which all current issues are routinely resolved.

By the time of the shareholder visit, more than 170 specialists were working at the construction sites (30 of them Kalmykia residents), and more than 20 units of equipment were in use. Builders work on a rotational basis, staying for the duration in nearby towns and villages such as Lagan, Komsomolsky and Ulan-Khol.

As the scope of work increases during assembly of the main pump house, the indoor switchgear building and the frequency converters, the workforce is expected to grow to a peak of 250 people.

The site visit noted that, to improve the efficiency, safety and convenience of future operation of the facilities being built, joint working sessions are held with Operations Department specialists at the design stage; their recommendations are then factored in both before design work begins and during more detailed engineering.

"When developing new projects, we draw on the practical operating experience of similar facilities and take on board all the sound suggestions from our colleagues in CPC's Operations Department", said Dmitry Medvedovsky, Deputy Technical Director for Engineering. "For example, in designing new facilities under the EPS Programme, we carefully studied feedback on the operating experience of facilities built between 2019 and 2025 under the DBNP".

In particular, the design of the new main pump house at Komsomolskaya PS includes a fixed access platform to allow servicing of the foam generators. Previously, servicing them required lengthy scaffold assembly or the use of special equipment, with the station having to shut down. The design for the Komsomolskaya PS main pump house also relocates the flame arresters to the ventilation chamber, making it possible to install fixed platforms for servicing them. Solutions for the technical basement of the ISG, PTS and VFD buildings, and for the placement of heating, ventilation and air conditioning equipment, have also been optimised.

At the end of the visit, shareholders asked contractor representatives a question: are they ready to install equipment that will be used for the first time in Russia's pipeline transport system? Executives at SK BIN LLC replied that they have relevant experience. The company's divisions recently completed a high-tech project involving hydrocarbon production on the Baltic Sea shelf in Kaliningrad Oblast, where they installed and commissioned pumps, gas compressors and light-fraction recovery equipment. The same specialists are now working at Komsomolskaya PS.

Pipeline repair components stored on the grounds of Komsomolskaya PS

Komsomolskaya PS – the first EPS site and the region's greenest station

Starting in October 2026, the EPS Project is due to begin at Kropotkinskaya PS, followed by A-PS-4A.

As a reminder, the programme to switch CPC facilities from gas turbines to external power supply has been under way since 2024. In 2025, CPC and UDM LLC, a management company within the Transneft PJSC group, signed a contract for the manufacture, supply and supervision of installation of 11 main pump units. In 2026, testing began on a previously manufactured prototype: a pump at PS-7 in CPC and an electric motor at the Torgili linear operation and dispatching station (LODS) in Transneft PJSC.

Shareholder representatives gave high marks to the contractor's organisation of work at the construction site, as well as to current progress on the project, achieved while strictly observing occupational health and industrial safety requirements. Key factors behind the high-quality, safe execution of the work were proper coordination and oversight of contractors by staff of the DKS Construction Headquarters, along with the regular presence of occupational health specialists directly on site.

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Piloting Experience

Prospects for Introducing and Developing a Predictive-Diagnostics-Based Maintenance and Repair System for Main Pump Units

For decades, scientific and industry circles in the Russian and Customs Union oil and gas sector have debated the economic case for moving away from scheduled preventive maintenance (SPM) of process equipment toward less costly maintenance and repair (M&R) concepts, while keeping the reliability and safety of hazardous production facilities (HPS) at acceptable levels.

The SPM system was the foundation on which equipment operation was built across Soviet industry and, later, the post-Soviet states. Its underlying logic is sound from an engineering standpoint: servicing equipment at set intervals – based on operating hours, cycles or calendar dates, regardless of its actual technical condition – maximises reliability and reduces the influence of subjective factors. The drawback of this system was the high overall cost of the work. Under the planned economy, with materials and spare parts allocated centrally, resource planning and supply were strictly rationed to the levels required to meet regulatory requirements.

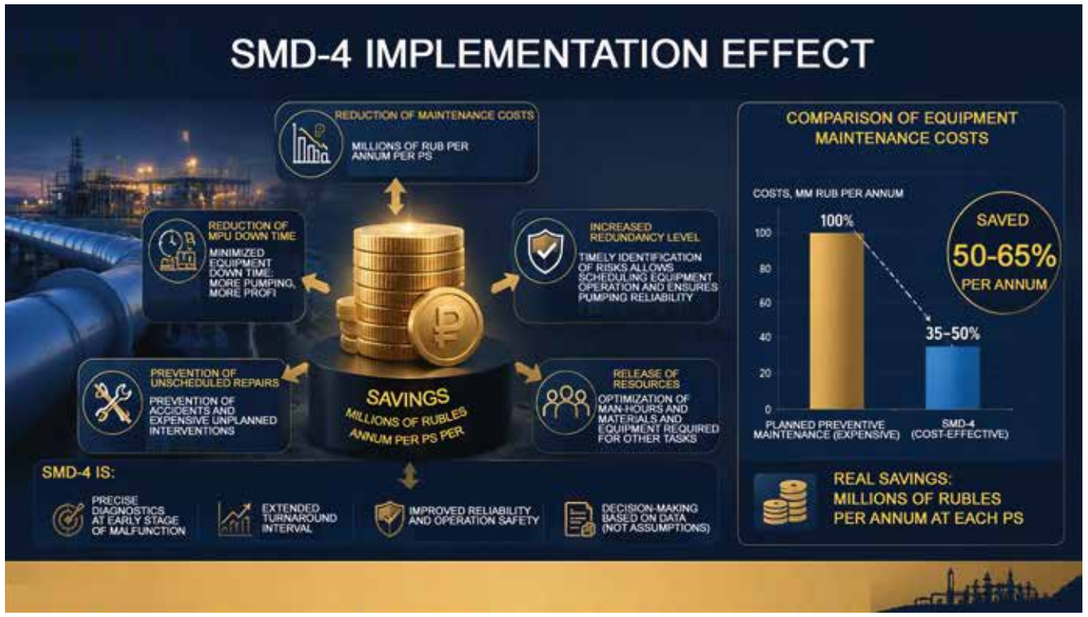
Under a market economy, the question of changing maintenance and repair approaches became pressing. Carrying out M&R on process equipment regardless of its actual condition began to be seen as an unjustified expense that ate into profits.

However, the momentum built up in the Soviet era, together with continuing inertia and the existing regulatory framework, long prevented a genuine shift from one M&R system to another. Making such a transition possible required a fundamental overhaul of industrial safety legislation. Following the adoption of Federal Law No. 116-FZ of 21 July 1997 “On the Industrial Safety of Hazardous Production Facilities” (116-FZ), and later Federal Law No. 523-FZ of 28 December 2024 “On Technology Policy in the Russian Federation and Amendments to Certain Legislative Acts of the Russian Federation” (523-FZ), the executive authorities drafted new implementing regulations that fundamentally changed how industrial enterprises operate and how the state oversees and supervises their activities. Russia has now put in place the entire regulatory framework needed for digital transformation, the creation of intelligent production facilities, and flexible management of process equipment M&R by operating companies.

With that background, let us turn to the substance of a predictive-diagnostics-based M&R strategy as applied to main pump units – the key components of pump stations (PS).

The typical structure of a CPC pump station (an HPF under the 116-FZ classification) can be broken down into several core asset types: the pump unit (a technical device), process piping and tanks (structures). For each of these, depending on the diagnostic tools available, a separate M&R strategy can and should be chosen.

The adoption of GOST R 72328-2025 “Digital Machine-Tool Industry. Process Equipment Monitoring. Predictive Diagnostics. General Provisions”, which entered into force on 1 January 2026, establishes unified terminology and a methodological framework for systems of this class, paving the way for their systematic rollout at HPFs, including main pipeline facilities. The development of this new class of automated process equipment monitoring and predictive diagnostics systems is becoming an important foundation for achieving high technical and economic efficiency and for managing enterprises’ production infrastructure.



Under clause 3.15 of GOST R 72328-2025, predictive diagnostics is defined as the process of forecasting equipment condition by analysing diagnostic indicators in order to predict possible failures and malfunctions before they occur, implemented using analytical data-processing methods applied to data collected from sensors, control systems and monitoring systems during equipment operation.

Clause 4.4 of GOST R 72328-2025 further sets out specific technical requirements and functional criteria for predictive diagnostics systems.

In other words, given the current global level of technological development, predictive diagnostics can be implemented through a combination of software and hardware that continuously monitors the technical condition of operating equipment and forecasts faults based on live, real-time data. Human presence in the immediate vicinity of an operating pump unit is not required at this stage: data collection, analysis and transmission to the responsible officer’s remote workstation are all carried out automatically.

SMD-4 as the Basis for a Qualitative Shift in Operation and Maintenance Strategy

As part of an import-substitution programme, in December 2024 the SMD-4 monitoring and diagnostics system, manufactured by VAST Association LLC, was placed into pilot operation on the main pump units at A-PS-5A of the Central Regional Division. A team of young scientists and engineers from St Petersburg (supervised by Aleksei Vasilyevich Barkov, Candidate of Physical and Mathematical Sciences, and Iosif Abramovich Yudin, Candidate of Technical Sciences) has developed a system with broad functionality that complies with GOST R 72328-2025 and can serve as the basis for shifting MPUs from scheduled preventive maintenance to an M&R strategy driven by predictive technical diagnostics.

The SMD-4 system provides:

- round-the-clock (24/7) monitoring of current vibration parameters on operating MPUs – the primary criterion for assessing the condition of rotating equipment;
- continuous condition monitoring, comparison of current and historical parameters, and detection and classification of defects;
- calculated forecasting of MPU fault-free operating time, based on analysis of the nature of detected and developing defects;
- full online display of information through an intuitive interface.

In addition, using remote technical support for the software, specialists from the SMD-4 manufacturer can promptly refine the system’s algorithms, improving its functionality, increasing forecast accuracy and expanding the range of defects it can detect.

The methodology underlying SMD-4 is built on the well-established technique of vibration

diagnostic monitoring (VDM) – the most precise operational method of non-destructive testing used to detect and classify a wide range of faults in rotating equipment without shutting it down or taking it out of service. Non-destructive testing procedures, including VDM, are governed by the Federal Industrial Safety Norms and Rules "Basic Requirements for Non-Destructive Testing of Technical Devices, Buildings and Structures at Hazardous Production Facilities", introduced by Rostekhnadzor Order No. 490 of 21 November 2016 (FNP No. 490).

A reasonable question arises: what, then, is genuinely new about SMD-4, given that VDM has been used to assess vibration condition for decades? As is often the case, the details matter. The novelty lies in the purpose-built hardware and mathematical signal-processing methods applied to data from vibration sensors permanently installed on the MPU.

Just a few years ago this would have been hard to imagine, since even in recent years conventional VDM suffered from two fundamental limitations. First, subjectivity: assessing technical condition from vibration data depended directly on the skill of the vibration diagnostics specialist. Second, a fixed vibration monitoring system could only record current vibration levels and flag when they rose, without being able to forecast how defects would develop.

The signal-processing algorithms developed for SMD-4 – its artificial intelligence – remove both limitations. Notably, a system of this kind can be installed on pump units from any manufacturer, regardless of make. For example, the Russian plant Transneft Oil Pumps JSC has already built provision for a predictive-diagnostics-based M&R system, given equivalent functional capability, into the accompanying documentation for its NM 4500-650 pumps, which are due to be supplied to CPC facilities under the EPS Project.

As one specific case, for the Flowserve-made MPUs operated at CPC pump stations, the raw signal is output by sensors from the Bently Nevada fixed vibration monitoring system. The SMD-4 equipment set installed at A-PS-5A is shown in Figure 1.

Working from a Moscow office thousands of kilometres from the equipment in operation – and, quite literally, without leaving the desk – a vibration diagnostics specialist can obtain full information on MPU condition through the SMD-4 software's intuitive interface. The SMD-4 software interface is shown in Figures 2 and 3.

Over eighteen months of operation, this vibration diagnostic monitoring system on A-PS-5A's MPUs has built up a database that supports confident conclusions about SMD-4's effectiveness and the achievement of all its target performance indicators. One telling example: within the very first hours of operation, SMD-4 detected a non-critical manufacturing defect on the shaft neck at the location of the MPU's electric motor "field-side" bearing – a finding subsequently confirmed by instrument measurements during bearing assembly maintenance.

Until now, however, SMD-4 has not been deployed anywhere else in the oil and petroleum product pipeline transport systems of Russia or the Customs Union countries. This, once again, underscores the forward-looking role played by CPC General Director Nikolay Gorban in driving key decisions on the introduction of advanced risk-management methods for one of the pipeline system's most safety-critical categories of process equipment.

In April 2026, the Professional Excellence Centre of the International Association of Oil Transporters (IAOT) held one of its regular sessions at the production site of Transneft R&D Institute LLC in Ufa. At the event, CPC Lead Vibration Diagnostics Engineer Andrei Sakharnov gave a presentation detailing SMD-4's functional capabilities and the results of its application at A-PS-5A. The presentation drew strong interest from Russian, Kazakh and Chinese colleagues alike. Following the discussion, participants concluded that SMD-4, applied to main pump equipment, could become the basis for introducing unmanned operating technologies at pump stations.

FIG. 1. SIGNAL-PROCESSING HARDWARE FOR THE BENTLY NEVADA FIXED VIBRATION MONITORING SENSORS

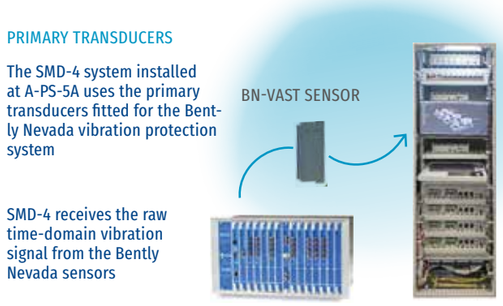


FIG. 2. THE SMD-4 INTUITIVE INTERFACE

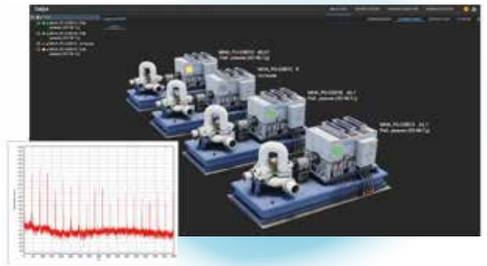
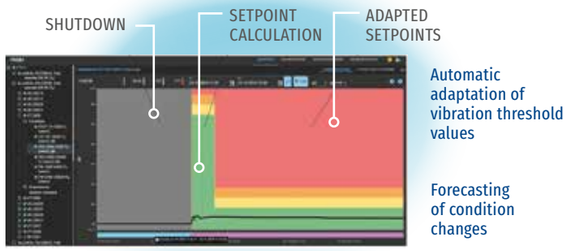


FIG. 3. THE SMD-4 INTERFACE IN CONTINUOUS MONITORING MODE



Rolling Out SMD-4: A Confident Step Toward a High-Tech Future

What opportunities does the rollout of the SMD-4 predictive diagnostics system on the main pump equipment of pump stations open up for the Consortium under 523-FZ (Articles 4 and 9)?

Meeting industrial safety requirements during operation and carrying out timely, high-quality M&R of HPF process equipment – alongside the unconditional fulfilment of oil transportation plans – is the central task around which all of CPC's production activity is organised. This task should be approached not only from the standpoint of safe equipment operation across its life cycle, but also as an entire area of management encompassing rational M&R planning, cost optimisation, and the legal dimension of dealing with state regulatory authorities. Applying a predictive diagnostics system to main pump equipment meets all these objectives and complies with Russian legislation.

Once the necessary revisions are made to CPC's internal regulatory documents – first and foremost VRD 79.08.2024, "Guidance Document on the Maintenance of Mechanical and Power Equipment, Automation Systems and Instrumentation at CPC Facilities" – the legal framework for optimising the scope and timing of main pump equipment M&R will be fully in place.

The operating company currently spends significant sums on a SPM system run by a specialised third-party contractor, based purely on fixed operating hours – sometimes with no other justification. Extending the intervals between repairs and eliminating lengthy unplanned repairs by basing them on actual technical condition, using predictive diagnostics data, would let the Consortium cut MPU downtime and improve redundancy levels. It would also free up significant resources for other operational priorities.

A system of this kind can be installed on any rotating equipment, but the payback period for SMD-4 will be shortest, and the economic benefit greatest, when applied to MPUs and BPUs.

At present, the rollout of this predictive diagnostics system could follow this sequence:

1. Accumulate diagnostic data, analyse the findings, and make a formal decision on the full-scale rollout of SMD-4 and its extension to the remaining pump stations.
2. Develop a technical upgrade project for the automation and parameter-monitoring system, adding vibration-based equipment condition monitoring channels. Carry out an industrial safety review of the technical upgrade project.
3. Amend CPC's regulatory documents to describe the M&R business process for equipment fitted with SMD-4 as a predictive system, shifting from scheduled preventive maintenance to condition-based repair using system data.
4. Develop a five-year programme for rolling out SMD-4 across all pump stations, including the necessary budget planning.
5. Procure and install SMD-4 equipment sets at CPC pump stations in phases, carry out commissioning work, bring the systems into service, and complete the transition to a predictive M&R system.

Economic Effect of Implementing SMD-4

Applying a predictive diagnostics system to main pump equipment meets all of CPC's key operational objectives: safety, rational M&R planning, cost optimisation, and compliance with regulatory requirements.

A direct cost calculation shows that forgoing even a single scheduled maintenance intervention per calendar year reduces MPU maintenance costs at one pump station by millions of roubles.

AUTHOR

Pavel Kretov

To teach discipline

Anton Tumanov, Vice-Rector for Youth Policy and Character Education at Gubkin University and Senior Lecturer at the Department of Labour and Personnel Management, talks about studying law at an oil and gas university, the sharing economy as a challenge for engineers, and the future of the industry

Anton, when you were a student at Gubkin University you chose a field that isn't exactly typical for an oil and gas school – law. What led to that decision?

◂ My own experience shows that the choice was both useful and genuinely interesting. Alongside the legal subjects, we had a substantial block of industry-related disciplines tied to petrochemistry. During my studies I worked at the I. M. Gubkin Scientific and Technical Society of Oil and Gas Workers, which is how I ended up doing my hands-on placement at the Romashkino field. There I saw the entire production chain: wells, laboratories, pump stations and compressor stations. I later did further pre-graduation placements at an oil company and, after that, at the Ministry of Energy. So this wasn't a case of forcing legal subjects to fit an oil and gas context – I had a genuine, full immersion in the industry, which gave me an excellent foundation for understanding the fuel and energy sector as a whole.

We teach some genuinely unique disciplines here: mining law, environmental law, pipeline law. Of course, other law schools cover these topics too, but Gubkin University pioneered the field. Students don't just study legal codes – they come away understanding how ownership rights over a pipeline are allocated, and what protection zones actually mean. Our economists and lawyers are genuinely immersed in both the production technology and its economics. It's a practical, encyclopaedic kind of education. I've never once regretted that choice.

My advice to students: never turn down a chance to visit a working facility – it's invaluable. You'll always get to see Moscow and the offices anyway

International students at an embassy reception marking Gubkin University's 95th anniversary

▸ So your first placement was in Tatarstan, in the Almetyevsk area?

◂ Yes, and it's a memory I'll carry for life! I was the lawyer of the group, travelling with two chemistry-student friends – we took the train, then covered another 30 km from the station. We went through all the clearances and a medical check. In the company's legal department, I found myself doing serious work straight away – drafting documents on breaches of protection zones around linear facilities. If someone had built a dacha under a power line or over a pipeline route, we would send them a notice: "Either you correct the violation yourself, or by law it will be demolished, with all costs charged to you".

That was my job until lunchtime; in the afternoon I'd go over to the chemists, to the environmental monitoring lab. We travelled around natural and industrial sites, collecting and titrating samples. I saw oil collection points, drilling rigs, wellheads. There was also a delivery point where crude entered the Transneft pipeline – a customs zone with automatic monitoring. The specialists there were hospitable, treating us to tea and sweets and showing us real production in action.

My advice to students: never turn down a chance to visit a working facility – it's invaluable. You'll always get to see Moscow and the offices anyway.

▸ You're responsible for youth policy. What initiatives are Gubkin students putting forward these days?

◂ There are plenty of initiatives. We have more than 10 student associations, 23 clubs at the Gubkinets Palace of Culture – everything from folk to contemporary dance, a Cossack ensemble, a brass band, a drumline. There are also more than 30 teams competing across 40 sports.

Youth policy is really about the second half of the day. Gubkin University has a large number of students from other regions, and our job is to build an environment where they spend their time productively – on self-development, creative pursuits, science and community activities. We support any reasonable initiative, from providing venue space to financial assistance. What matters to us is that a student leaves not just with a diploma, but with an understanding that their work matters to the country – in a significant industry that brings heat and light into our homes. Around 1.3 million specialists work in Russia's oil and gas sector today, and their labour generates substantial revenue for the state budget.

▸ How have the CPC-supported renovated lecture halls and the newly purchased buses helped with youth work?

◂ The Open Lecture Hall, refurbished with CPC's support, has become a regular venue for events. This spring it hosted talks for students by Hero of Russia and cosmonaut Anton Shkaplerov and MMA fighter Aleksandr Oleynik. The hall is a modern space that can be reconfigured for any format or audience.

The benefit of the buses was felt immediately. We use them to take students to our placement sites, to competitions, and to performances by our creative groups – for example, the "Spring of '45" festival. The larger capacity of the new buses has made these trips

Cosmonaut A. N. Shkaplerov speaking at Gubkin University's Open Lecture Hall

more comfortable, and now we can take more students along.

▸ What is the scope of the Vice-Rector for Youth Policy's responsibilities – does it extend to the branch campuses in Orenburg, Tashkent and Atyrau?

◂ The position of vice-rector for youth policy in its current form was established in 2022, though its roots go back to 2020, when the concept of "character education" was reintroduced into education law. At Gubkin University, incidentally, this area was never neglected – even through the difficult 1990s, the university's leadership gave it proper attention.

The effectiveness of youth-policy work is assessed by a collegial body of vice-rectors under the Ministry of Science and Higher Education. We meet in Moscow several times a year.

As for the branch campuses: we stay in constant contact with Orenburg, Tashkent and Atyrau. Working with our colleagues abroad is more complicated, given differences in state policy, but we still exchange experience and help them build up character-education work locally.

Gubkin University has more than 10 student associations, 23 music and dance clubs, and over 30 teams competing across 40 sports

▸ One of your papers on educational theory makes the argument that promoting a hedonistic lifestyle undermines not only moral character but also professional development. Isn't there a contradiction here: on the one hand, modern capitalism deliberately cultivates a consumer society focused only on the present, while on the other, it creates its own workforce problems?

◂ These processes run in parallel. The sharing economy is convenient and makes sense to young people. The problem isn't the economic model – as the classic saying goes, it's in people's heads. There's no need to fight car-sharing or e-scooters; they're cheap and convenient. But a student needs to understand that you can't build a whole life relying only on rented things and rented spaces. A strong family built on traditional values is impossible without planning for the future and building up shared assets together.

In a sense, the industry itself helps us here: an engineer working in oil and gas production simply can't be self-centred. He isn't extracting resources for his own dacha – he's doing it for the country. People at the fields work in shifts and live in rotational camps, which also fosters a healthy sense of collectivism, where personal interest is set aside for the common good. Today, restoring that focus on family, stability and responsibility is genuinely one of the key tasks of character education at universities.

▸ Oil and gas companies worldwide place a great deal of emphasis today on industrial safety and occupational health. How does Gubkin University respond to what industry is asking for on this front?

◂ Working together with the country's leading oil and gas companies, we factor all these trends into our academic programmes. But beyond knowledge, students also need to be trained in discipline and unconditional compliance with every safety rule that exists on a production site.

A. A. Tumanov moderates the "No-Tie Meeting" at the "Oil and Gas 2026" forum

An engineer working in oil and gas production simply can't be self-centred

Using personal protective equipment and responding to threat signals has to be drilled in until it becomes reflexive. When we run safety drills at the university, we watch closely how students react. If someone doesn't respond appropriately here, on a real production site the conversation with them will be short. The rule is simple: the alarm sounds, you move to the safe zone – no debate about whether it's real, a drill, or a false alarm. The cost of a mistake is too high. We instil this as a way of thinking, not just a rule.

▸ Gubkin University hosts the International "Oil and Gas" Forum every year. What does it deliver for students?

◂ The forum is the brainchild of our student scientific society, which turned 80 last year. The event carries government-level status. On the character-education side, it's supported by a huge team of student volunteers. Students get to try their hand at organising conferences, doing research and preparing presentations.

The value of the event lies in the fact that, in the comfortable, familiar setting of their own university, people stop being intimidated by science. They see real outcomes: some get a diploma, others find a placement or even a job through the contacts they make. The conference programme brings together government officials, scientists and potential employers. For an engineer, it's a chance to present their work in public; for a young researcher, it's an opportunity to give their first academic talk and engage in discussion with recognised experts.

▸ In your view, are today's Russian students capable of ensuring generational continuity in the industry? What are the prospects for cooperation with CPC on this front?

◂ I'm always optimistic about students. In time, they'll join the industry, and we're doing everything we can to make sure our graduates are ready for that. Yes, they'll be different from previous generations – but then again, our own generation seemed "different" to the ones we replaced. It's the age-old story of parents and children.

We work on students' personal qualities, their moral principles and their sense of direction. Today's students genuinely have a wide range of opportunities to prove themselves – for example, the 35 federal forums run by Rosmolodezh, the Federal Agency for Youth Affairs, stretching from Kaliningrad to Kamchatka. They even have to choose between them, which isn't easy, but it's a good problem to have.

As for CPC, we're glad the company has maintained a long and close relationship with the university,

A student presentation at the "Oil and Gas 2026" forum

including as an employer, and takes part in our academic events. It's important for students to get to know the company's corporate culture, achievements and technical developments. As a participant in the "Oil and Gas 2026" forum and moderator of the "No-Tie Meeting", I saw first-hand how genuinely interested students were in the presentations given by CPC General Director Nikolay Gorban and other Consortium representatives. Meetings, conferences and briefings like these are also important points of contact that help shape a positive image of a production company that's investing in the country's future among students.

AUTHORS

Nikolay Tserenov,
Protection Service Head,
Corporate Security Division, CPC-R
Pavel Maslov,
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Leaving No Chance for Intruders

In April 2026, Elista hosted an interregional professional skills competition for line managers of Nachin LLC, the security company that helps protect CPC-R facilities. Guests at the event included specialists from CPC-K and MM-Security LLP – the contractor responsible for security at facilities along the Tengiz – Novorossiysk pipeline in Kazakhstan – as well as instructors from Gubkin University

Now in its second year, the professional skills competition, organized by the CPC Corporate Security Division, is designed to sharpen security staff's practical and theoretical skills in protecting facilities and the pipeline's linear section within the Russian Federation. Beyond gauging competency and training levels, these competitions motivate employees to raise their qualifications and improve the quality and efficiency of their work, while also encouraging career growth.

The judging panel – which, alongside CPC Corporate Security Division and Nachin LLC managers, included representatives from Gubkin University's Department of Integrated Security for Critical Facilities – closely

reviewed each participant's performance and achievements and heard reports from line managers on their duties and results in their assigned areas.

A key stage of the competition tested participants' knowledge of federal legislation, Russian government resolutions, and the company's internal regulations and policies governing physical protection and anti-terrorism security at fuel and energy sector facilities.

In the practical exercises, competitors demonstrated strong skills in ensuring CPC facilities' anti-terrorism security, coordinating personnel actions during emergencies, and detecting unlawful interference, including incidents involving unmanned aerial vehicles.

Once all the scores were tallied, the Nachin LLC unit responsible for security at CPC's Central Region facilities was named the strongest performer of 2026. PS-2, located in the Republic of Kalmykia, was named the best-protected facility, while the Marine Terminal took first place in the "Best Security Area" category.

"Threats to fuel and energy facilities have grown significantly in the current environment, but our security units are keeping pace, continually refining their approach and rolling out new equipment and protection methods", said Grigory Senoyedov, Head of the CPC Physical Security Team. "Competitions like this let us share best practices and experience, keep our staff informed of important legislative changes, and encourage sound initiative in the field".

The interregional professional skills competition was first held in 2025, at venues including the Training Center in Elista, the Marine Terminal's Tank Farm, and sites in Astrakhan, Ipatovo, Izobilny, and the settlement of Novotitarovskaya in Krasnodar Krai. It brought

CPC Corporate Security Division and Nachin LLC managers serving on the jury

Competition winners

together 96 Nachin LLC line managers. The team event identified the best-performing region, area, and security facility, while individual winners were named in the categories of Security Specialist, Head of Security Area, Senior Security Shift Supervisor, and Duty Officer. Based on top results in both theoretical and practical assignments, the strongest performers were also singled out separately as best practitioner and best theorist.

"We place great importance on staff selection, continuously improving our people's professional training, and equipping our officers with everything they need", said Sergei Kudinov, Head of the CPC Regime and Internal Security Service. "The more professionally our security officers act, the fewer chances offenders have of carrying out their plans. We're glad to welcome highly skilled specialists who clearly understand their responsibility for facility security, and we're just as committed to growing that talent within our own ranks".

Awards ceremony at the Marine Terminal

Competitors completing a theoretical assignment

"The competition gives us a real-time picture of how ready our specialists are to handle various threats. We can see their strengths and weaknesses and identify exactly where our people still need to sharpen their professional skills", said Savr Badmayev, General Director of Nachin LLC, commenting on the results.

The CPC Corporate Security Division carries out ongoing work to protect the company's facilities and build the competencies of its security personnel. In 2023, CPC and Nachin LLC jointly built a Training Center in Elista. The Consortium holds off-site seminars on physical security at fuel and energy facilities every year and works closely with industry training institutions and partner companies in this area. Representatives of CPC took part in security service meetings for oil and gas companies in Atyrau in 2024 and in Uralsk in 2025. Security is also a priority for the Consortium's shareholders (Transneft, KazMunayGas, Chevron, Shell, Eni, and others). The CPC Corporate Security Division regularly takes part in shareholder-organized security forums, where participants discuss current threats to oil transport infrastructure facilities in Russia and Kazakhstan and ways to protect them. A key part of these meetings is the exchange of experience on organizing physical protection during emergencies, industrial accidents, and access control violations. In October 2026, representatives of the CPC Corporate Security Division will take part in the Energy Security Forum in Astana.

Briefing at the training ground

The Consortium works effectively with Kazakhstani government agencies on anti-terrorism protection for the company's facilities amid a growing range of threats.

Cooperation with leading oil and gas universities is growing dynamically. With input from CPC Corporate Security Division representatives, Gubkin University has developed a professional development program for managers and specialists at fuel and energy companies who focus on anti-terrorism security at oil and gas facilities.

AUTHORS

Personnel Training and Development Team

Formula for Vocation

In November 2025, ten CPC experts stepped outside their usual professional environment and found themselves facing an audience that asks the most unexpected questions – students in grades 8 through 11, who ask straight out: "Do you actually find what you do interesting?"

Every year, thousands of school graduates choose a field of study with almost no real idea of the tasks they'll actually face on the job once they have their degree in hand.

An applicant browsing a university website sees an attractive admissions-campaign page listing degree programs and makes a choice based on only a rough sense of the profession's real opportunities, career prospects, and the challenges a specialist in that field will face.

Often, it is the parents who make the choice for the applicant, and they do not always take their children's actual talents and interests into account.

It was this very observation that led CPC General Director Nikolay Gorban to propose an idea that staff of the Personnel Training and Development Team and CPC experts then turned into the Profession Portrait project: conversations with students in grades 8 through 11 about future technical careers.

The logic behind the project is simple: people who have already made the journey from student desk to the position of a highly qualified engineer can tell school students things they won't find on any university website or in any textbook – the living professional context, the real tasks, and the difficulties and challenges of the profession.

Behind the Scenes of the Project

Seven technical specialties were chosen for the project, along with one track focused on developing universal competencies.

Ratmir Timirgazeyev, Head of the Mechanical and Process Equipment Repair and Maintenance Service, told the younger generation about the mechanical engineering profession.

Elena Nikitina, Head of the External Power Supply Service, walked students through the ins and outs of the electrical engineering profession.

The "power" theme continued with Alexander Talyanov, Senior Engineer for the Automated Informational and Power Metering System (AIPMS), and Maxim Metelitsyn, Lead Engineer for AIPMS. They explained to students the difference between a power engineer and an energy metering engineer, describing each specialty in detail.

Dmitry Filippov, Head of the Controls and Instrumentation Service, addressed future process automation engineers. Dmitry Ayvazyan, Chief Specialist for Information Security, introduced students to the especially fast-moving current trends in cyberattacks and phishing. Natalya Kovshova, Senior Economic Analyst, spoke about how a financial analyst adapts to the tasks of a specific industrial enterprise.

Dmitry Ayvazyan talks about information security

Universal competencies requiring an analytical approach and critical thinking (planning, training, design, and other areas) were covered in conversations led by Alexandra Rabinovich, Leader of the Personnel Training and Development Team (Training Manager); Anastasia Belova, Head of the Personnel Development Service; and Victoria Shishkina, Head of the Personnel Training Service.

Each session was designed as a genuine conversation about the profession – honest, direct, and full of practical examples.

CPC experts prepared presentations covering the real tasks and challenges of the profession, possible career paths, prospects for the specialty's development, and relevant universities and degree programs.

What Happens in the Classroom

The project launched at Gazprombank School, a private general education institution.

A series of sessions with students in grades 8 through 11 confirmed that the format resonates with its target audience and is easy to follow. Following this, the decision was made to continue the project at other educational institutions in Moscow.

Dmitry Ayvazyan met with students at Bauman Engineering School No. 1580 and School No. 630, named after twice Hero of the Soviet Union Grigory Kravchenko.

A session with students at Gazprombank School

The Chief Specialist for Information Security showed students examples of phishing emails and mass mailings that mimic requests from well-known companies and government agencies, complete with seemingly authentic addresses and logos. He then asked a direct question: “Would you click the link?” Most of the audience raised their hands.

Explaining how to spot a phishing email, Dmitry Ayvazyan focused students’ attention on details such as a fake domain that differs by a single letter, an artificially manufactured sense of urgency designed to switch off critical thinking, a suspicious attachment, and more. The students grew quiet, then peppered him with questions: how do you verify a sender, and what do you do if you’ve already clicked the link?

Information security stopped being an abstraction the moment their own accounts were on the line.

For his part, Ratmir Timirgazeyev, Head of the Mechanical and Process Equipment Repair and Maintenance Service, came up with a format that broke the stereotype of the boring technical lecture. He opened his talk on the mechanical engineering profession with slides of complex engineering structures – the Sayano-Shushenskaya hydroelectric power plant, the turbofan engine of the Sukhoi Superjet 100, and a 3D model of a twin-spool turbojet engine – and a question: did the students know what these were? Then came the next level of difficulty – portraits of famous engineers such as Konstantin Tsiolkovsky, Igor Kurchatov, Pyotr Kapitsa, and Karl Benz, with the questions “Who is this?” and “What did the people in these photos invent?”

Ratmir Raisovich gave books about famous engineers to the most active students.

Kids and Adults

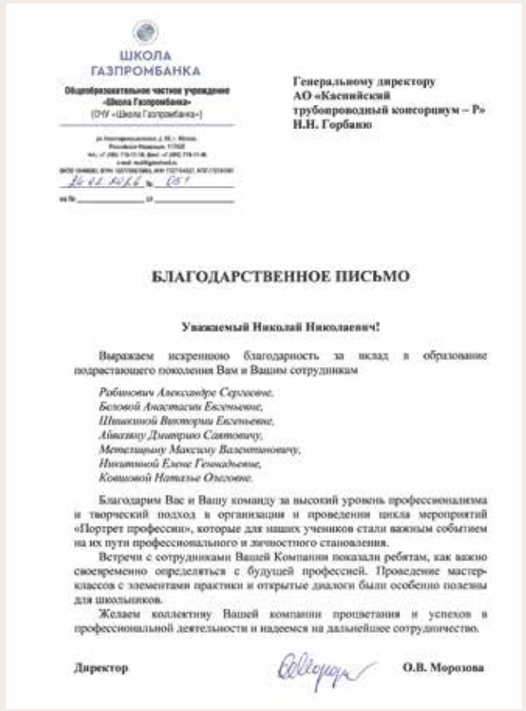
Project participants note an unexpected effect: students respond more to sincerity than to status, and an expert’s formal credentials interest them far less than the answer to the question “If you could choose again, would you choose the same path?”

In answering the students’ questions, colleagues tried to reveal not just the technical side of their work, but also the logic and meaning behind it within the broader context of how all of the enterprise’s systems work together smoothly.

The experts shared the logic and reasoning behind decisions they had made, explained the purpose of their tasks in terms an outside observer could understand, and helped the students see not just what is done, but why it matters – inspiring them to find their own sense of purpose in choosing a career path.

The main idea the sessions managed to convey was this: an engineer is not just someone hunched over blueprints, but someone who creates technologies and solutions and turns ideas into reality using both knowledge and creative thinking.

Natalya Kovshova talks about the financial analyst profession at Gazprombank School



ШКОЛА ГАЗПРОМБАНКА

Общеобразовательное частное учреждение «Школа Газпромбанка» (ОЧУ «Школа Газпромбанка»)

Генеральному директору АО «Каспийский трубопроводный консорциум – Р» Н.Н. Горбаню

БЛАГОДАРСТВЕННОЕ ПИСЬМО

Уважаемый Николай Николаевич!

Выражаем искреннюю благодарность за вклад в образование подрастающего поколения Вам и Вашим сотрудникам

Робинович Александре Сергеевне,
Беловой Анастасии Евгеньевне,
Шишкиной Виктории Евгеньевне,
Аввакуну Дмитрию Сантовичу,
Мотецицкому Максиму Валентиновичу,
Никитиной Елене Геннадьевне,
Ковшовой Наталье Олеговне.

Благодарим Вас и Вашу команду за высокий уровень профессионализма и творческий подход в организации и проведении цикла мероприятий «Портрет профессии», которые для наших учеников стали важным событием на их пути профессионального и личностного становления.

Встречи с сотрудниками Вашей Компании показали ребятам, как важно своевременно определяться с будущей профессией. Проведение мастер-классов с элементами практики и открытые диалоги были особенно полезны для школьников.

Желаем коллективу Вашей компании процветания и успехов в профессиональной деятельности и надеемся на дальнейшее сотрудничество.

Директор О.В. Морозова

Investing in the Future

As a career-guidance program, Profession Portrait can be considered an investment both for the Russian market of industrial specialists as a whole and for CPC in particular.

A spark of interest lights up inside a student who hears a fresh, unconventional account of what it’s like to work as an engineer in the oil and gas industry. They begin exploring the ins and outs of their future profession and the field itself. This project can become a powerful incentive to choose the right university and start preparing early for adult life. Students come to understand that achieving their dreams takes study, skill-building, and a willingness to face new challenges.

The project also helps build CPC’s reputation as a company where people hold real professional convictions and are willing to talk about their work openly and with respect.

Taking part in the project demands a skill that is often undervalued in technical circles: the ability to talk about complex subjects simply without losing precision. This isn’t popularization for the sake of simplification – it’s professional communication in its purest form.

Those who have been through several sessions with students all say the same thing: it changes how you see your own work. When you explain why you do what you do, you start to see it more clearly yourself.

The Profession Portrait project will continue in the 2026/27 academic year.

If you would like to join the team of experts, please contact the Personnel Training and Development Team.

Dmitry Ayvazyan talks with students at Bauman Engineering School No. 1580

Ratmir Timirgazeyev talks about the mechanical engineering profession at Gazprombank School

AUTHOR

Karina Saroyants,
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Health Week

From August 10 to 16, the Central Region office of CPC in Astrakhan held its first-ever Health Week – an event that brought together work, sport, care for emotional wellbeing, and family leisure. Together, we searched for an answer to the question: how do you stay energetic, productive, and happy amid the pace of a modern office?

Caring for the health of the working population is a priority of Russia's state social policy. Every year, Russia's Ministry of Health holds a Week for Promoting Best Workplace Health Practices. In 2026, this week ran from April 27 to May 3 and focused on reducing occupational risks and supporting active longevity. Experts have calculated that poor working conditions cost the Russian economy 1.4% of GDP annually – through early retirement, sick leave, and rehabilitation – while temporary employee incapacity costs Russian companies almost 2 trillion rubles directly. According to the WHO, workplace health measures help cut sick-leave absences by 27%. These programs benefit not only employers and the state, but employees too.

Fully sharing these values, and with management's approval, I proposed organizing a full-fledged Health Week for the Central

Volunteer coordinators of the online challenges

Region, drawing inspiration from federal practices but adapting them to the company's specifics. The program was built into the workday rhythm: 20–25-minute sessions during the lunch break, with voluntary participation. The guiding principle was that a healthy lifestyle should fit into everyday life, not disrupt it.

Why Now

We live in an age of information overload. Chronic stress, physical inactivity, poor nutrition, and blurred boundaries between work and personal time all drain the nervous system and reduce productivity. Health Week isn't a bonus – it's a necessity. We can't change these circumstances, but we can build inner resilience: learning to recover, switch gears, and take care of both body and mind. That was exactly the approach behind our Health Week, and it hit the mark, carrying forward a relay that began at the federal level.

The program opened with educational sessions. A visiting physician reviewed the occupational risks facing office employees and offered a practical action plan – from ergonomics to micro-breaks. A psychologist discussed stress and burnout with the audience: participants learned to recognize "warning signs" and picked up self-regulation techniques. A nutritionist spoke about "food for the mind" – how to maintain energy levels throughout the day.

Colleagues also joined webinars with doctors from the insurance company SOGAZ. An endocrinologist spoke about metabolic health and vitamin D, a cardiologist about arrhythmia prevention, and a urologist about men's health. Each webinar included live discussion, and participants received individual recommendations without stepping away from work.

The practical part of the program opened with a yoga class. The combination of static poses and breathing techniques gave participants an energy boost and helped release muscle tension. The instructor taught breath and movement control, emphasizing that mindfulness and consistency matter more than intensity.

Colleagues from the HR Support Service, Yulia Borisova and Svetlana Grosheva, ran a cooking master class, preparing healthy dishes in front of the audience and sharing recipes. The event wrapped up with a group

Cooking master classes

Yoga class

Colleagues' children at the Museum of Health

tasting in the canteen; the atmosphere was warm, and the food proved so popular it ran out fast.

Five Challenges

Alongside the in-person activities, the week buzzed with online activity as well: we launched five themed challenges. Participants joined group chats, shared their progress, and turned healthy habits into an engaging competition.

The "Step Forward" challenge helped build walking into daily routines. "Digital Detox" taught participants to unplug from their gadgets. The "Sugar-Free Week" challenge introduced people to the taste of natural food. "Beat the Smoking Habit" helped cut cigarette consumption. "Healthy Sleep" offered techniques for comfortable, restorative rest at night. Together, the five challenges formed a health ecosystem where everyone found something for themselves.

Besides me, each challenge was overseen by Junior HR Specialist Elena Kurdyukova, Senior Coordinator for Safe Work Culture Program Implementation Natalya Loskutova, Administrative Support Specialist Olga Podlesnaya, and Senior Administrative Specialist Ekaterina Fedotova. Winners were named at the end, but the real prizes were new habits and a stronger sense of team unity.

The program closed on Saturday with a trip to the Museum of Fascinating Health for employees' children. The interactive space turned science into an adventure. Children learned about anatomy, kinetics, dietetics, and hygiene, coming away with vivid impressions and embracing the values of a healthy lifestyle right alongside the adults.

Health Week showed that taking care of yourself isn't a dull obligation but an exciting journey full of discovery and positive emotion. High engagement, genuine interest, and heartfelt gratitude from colleagues all confirm that initiatives like this are essential. The skills we picked up are already reshaping our habits, and the team spirit will stay with us for a long time to come.

AUTHOR
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Photo: Maxim Stadnichenko

Oil Capital

Few cities in the world can boast of straddling two continents at once. Istanbul in Turkey comes to mind first, but Russia has such cities too – Orenburg, Magnitogorsk, and Orsk. In Kazakhstan, they are Uralsk and Atyrau, which was called Guriev until 1992.

The founding of the city at the mouth of the Ural River, where it flows into the Caspian Sea, was preceded by pivotal events in Russian statehood taking place roughly two thousand versts away, in Yaroslavl. On the banks of the Volga and the Kotorosl, the militia of Minin and Pozharsky was forming and gathering strength ahead of the decisive 1612 battle against the Poles. Two Yaroslavl merchant brothers, Ankidin Nazaryev and Guriy Nazaryev, played a major role both in the fighting itself and in supplying the militia with everything it needed. After driving out the occupiers, the Romanov dynasty did not forget the brothers' service and went on to actively support the growth of their family trading business.

The brothers' business reached as far as Siberia, and on the Caspian they invested in fishing. Life in this border region carried constant risk – uprisings, nomad raids, poacher attacks. What was needed was a fortress in which both the state and the merchants had an equal stake.

In 1640, Guriy built a small stockaded outpost where the Yaik River (now the Ural) flows into the Caspian Sea. As the fishing business expanded and the family's finances grew, the Nazaryevs – temporarily exempted from taxes – began building a stone fortress in 1645 with the permission of Tsar Alexei Mikhailovich. Over 15 years of construction, they spent a staggering 290,000 rubles.

Plan of the Guriev stockaded fort, late eighteenth century

Named after its founder, Guriev became not only a reliable Russian outpost but also a major transshipment point on the route to India.

The fortress itself has not survived to this day – it was demolished in the 1810s – but you can get a sense of what it looked like by visiting Zaraysk, near Moscow. As we might put it today, this was a standard design for the period, built according to the principles of Italian fortification art. Both fortresses were designed for all-round defense using artillery.

In 1667, Stepan Razin conspired with the streltsy of the Guriev garrison and holed up in the fortress. Voivode Bezobrazov tried to dislodge him with three thousand soldiers and twelve guns, entrusting the task of breaching the walls to the best foreign demolition specialists available. But the fortress held, and Razin left of his own accord, later losing the decisive battle of his life near Simbirsk. Notably, Europe watched the uprising closely: the outcome of the struggle would affect

Engraving, "Stepan Razin Throwing a Persian Princess into the Volga". Johannes Kip after a drawing by Jan Struys

the fate of key trade routes along the Volga, which linked Western countries with suppliers of Russian grain and with Persia. In England, the Netherlands, and Germany – where the first newspapers had just appeared – articles about Razin's peasant war were published.

The strength of Guriev's walls was tested again in 1774. Ataman Ovchinnikov, a lieutenant of Yemelyan Pugachev, who had declared himself "Emperor Peter III", advanced on the fortress. There was no serious battle: after a brief exchange of fire, Cossacks sympathetic to the rebels opened the gates themselves. Like Razin before him, Ovchinnikov left the fortress of his own accord – with rich spoils and a large influx of local volunteers. He rose to the rank of field marshal in Pugachev's army and was killed shortly afterward. To help erase the memory of these events, Empress Catherine II ordered the Yaik renamed the Ural. Pugachev's descendants suffered too, receiving derogatory surnames such as Durakov ("Fool"), Ostolopov ("Blockhead"), and Obyedov ("Glutton").

Grigory Yefimovich Grumm-Grzhimailo (1861–1921)

Archaeologists have established that older settlements once stood along the banks of the Ural north of present-day Atyrau, meaning Guriy Nazaryev was not the area's first city-builder. In recent decades, pipeline builders have actively contributed to archaeological discoveries: during construction of the CPC pipeline system, traces of the settlement of Aktobe-Laeti – mentioned in Genoese sailing charts – were found at the 197th kilometer of the route.

Archaeological excavations at the Aktobe-Laeti settlement

At kilometers 208–210, artifacts uncovered during construction of the underwater crossing of the Ural River pointed to the location of Saray-Shyk, once the capital of the Golden Horde and later the Nogai Horde. Lev Galkin, a historian and archaeologist specializing in the Bronze Age and the Golden Horde, believed the Caspian Sea has not always been retreating over the last millennium – the opposite has happened too. In his view, Saray-Shyk was built on a new shoreline around the thirteenth century, after Aktobe-Laeti, located further south, was submerged as Caspian water levels rose.

Postcard from the "Founding of the Dossor Oil Field" set. 1910s

The Rise of an Industry

For centuries, the city of Guriev lived off fish – so abundant in its narrow river that their sheer mass could break log fish weirs. Over time, fish stocks declined, and black caviar gave way to black gold.

In 1888, an expedition led by Colonel Grigory Yefimovich Grumm-Grzhimailo passed through Guriev on its way into the Atyrau steppe, accompanied by two guards officers, the Lehmann brothers, Baron Donelmayer, and Professor Lebedev.

The expedition members noticed oil seeps along the Emba River and observed local residents using oil to treat livestock for mange. In 1891, Colonel Grumm-Grzhimailo and his companions petitioned the tsar for the exclusive right to extract oil in the Emba district. Emperor Alexander III, "in recognition of their service", granted them the steppe and its subsoil in perpetuity.

For a while, the old "fishing" way of life and the new "oil" economy competed with each other in the region. As the magazine Novoye Vremya noted in 1913: "Here, nature itself and the people conspire against industrial development". When Guriev oilmen proposed building a railway and a bridge across the Ural, a Cossack military assembly resolved, in essence: "To avoid scaring off the fish, the petition is denied – we have no need of a bridge or a railway, and we live well and freely enough without them".

Even so, the Caspian oil district kept growing. By 1913, up to 2.5 million poods of oil had been extracted, and two kerosene refineries were under construction. Shipping the oil by sea required solving the problem of shallow water. A pipeline was laid from the oil fields, running 19 km along the Caspian seabed to a stationary barge. From there, roadstead vessels loaded the crude oil and carried it roughly 40 km further out to tankers.

During the Civil War, events unfolded in Guriev that could easily have come from the film The White Sun of the Desert. The White Guards fully accepted defeat in 1920 and evacuated through Persia (now Iran) to Mesopotamia (Iraq). Then, a year and a half later, a Red Army division unexpectedly staged a mutiny. Gathering a detachment a thousand sabers strong, the rebels tried to seize Guriev. The city was left almost undefended – only a handful of Cheka (All-Russian Extraordinary Commission) officers and a mounted police unit stood guard. Grooms, warehouse clerks, musicians, and signal operators were armed to help defend it. At one point, the "new Whites" seized the local prison and invited the inmates to join them, but in the end they were defeated despite their numerical advantage.

Rebuilding oil production at the wrecked fields after the war had to be done under the harshest conditions – epidemics, food shortages, a lack of fresh water, and a shortage of skilled specialists.

During the Great Patriotic War, the people of Guriev made a major contribution to the victory over the Nazis. A naval base was set up in the city, along with hospitals and a military infantry school. Oil workers and transport workers made their own significant contribution as well.

German saboteurs made their way into the strategically important Guriev area too. Even after the front had moved far to the west, the Nazis, stretched to their limits, kept dropping paratroopers. In the spring of 1944, a group of saboteurs disguised as Red Army soldiers was captured near the city. For ordinary soldiers, they behaved far too conspicuously – asking too many questions and spending too much money. Soviet counterintelligence, SMERSH, was especially pleased to capture a live enemy radio operator. For several months, he sent Berlin reports of the group's invented successes, each time requesting more men, weapons, and money. In midsummer 1944, all of it was delivered by plane from Romania to the location SMERSH had specified. What happened next needs no explanation.

A refinery was built in Guriev in 1944–1945, along with a residential district, Zhilgorodok, built in the Stalinist architectural style to house the workers. Today, the refinery has a capacity of more than 5 million tonnes of oil a year and produces 21 different types of petroleum products.

In 1979, the Tengiz field was discovered 350 km southeast of Guriev. In 1990, Lev Churilov, the last minister of the oil industry of the USSR, worked on the Tengiz field project. "Tengiz oil lies at extremely high reservoir pressure. When a powerful, uncontrolled gusher erupted from the well, it caught fire and burned for more than a year. That terrifying event cast a huge question mark over the entire project", Lev Dmitrievich recalled.

Developing the field required foreign technology. Early that year, a large delegation from the USSR Ministry of the Oil Industry traveled to the United States for talks with Chevron. The group of specialists included several representatives of the Kazakh SSR, to dispel concerns that Moscow might overlook the interests of the Kazakh Soviet Socialist Republic in the negotiations.

Construction of the Tengiz oil and gas field, 1988

The preliminary draft agreement on Tengiz called for the Soviet side to keep 75% of the profit, with 25% going to Chevron, but many other parts of the deal remained far from settled. How would the extracted oil be transported, given that there were no export pipelines nearby? In theory, all of it could be handed over to the USSR in exchange for Soviet oil on the Black Sea, with an adjustment for Tengiz crude's higher quality. Independent international experts spent months working through the calculations but never arrived at a solution everyone could accept.

In late spring 1991, Kazakhstan passed a law placing all resources located on the republic's territory under Alma-Ata's control. In May, Soviet President Mikhail Gorbachev and Kazakh SSR President Nursultan Nazarbayev agreed that only Kazakhstani representatives would take part in the negotiations with Chevron going forward.

Photo: Maxim Stadnichenko

March 26, 2001, the ceremony marking the filling of the CPC pipeline system with oil. K. K. Tokayev, then head of the Government of the Republic of Kazakhstan,launches a capsule with a message to the Marine Terminal's staff into the pipeline

Progress on resolving the transport question came in 1992. Kazakhstan and Oman established the Caspian Pipeline Consortium, and a month later Russia joined as well.

"I signed off on the draft intergovernmental agreement establishing CPC without a moment's hesitation, since I considered it beneficial for Kazakhstan, Russia, and the oil-producing companies", recalled Kadyr Baikenov, the first Minister of Energy and Fuel Resources of the Republic of Kazakhstan.

It quickly became clear that moving the project forward would require the direct involvement of major oil companies.

"That's how the idea came about to restructure the Consortium – transferring 50% of CPC's shares to private oil-producing companies", recounted Anatoly Shatalov, First Deputy Minister of Fuel and Energy of Russia at the time. "The oil companies committed to fully finance construction of the pipeline system's first phase. In turn, Russia and Kazakhstan transferred pipeline assets to the reorganized Consortium – a section of the Tengiz – Astrakhan – Grozny pipeline built during the final years of the USSR – valued at market price".

"Initially, two of Kazakhstan's largest fields, Tengiz and Karachaganak, were tied to the project", adds Kairgeldy Kabyldin, CPC Deputy General Director for Relations with the Government of the Republic of Kazakhstan, who held senior leadership positions at Kazakhstan's Ministry of Energy and Fuel Resources and at its Ministry of Oil and Gas Industry. "Oil from precisely these fields was meant to find its way to export markets once the trunk pipeline was built. The foreign companies already developing these fields were prepared to finance 100% of the pipeline's initial construction".

The restructuring of the Consortium was completed on December 6, 1996. Taras Kasymov, operations manager for the transcontinental pipeline and a member of the Caspian Pipeline Consortium's (CPC's) executive committee, took part in signing the agreement in 1996 on behalf of the Government of the Republic of Kazakhstan. Today, PS Atyrau, part of the Atyrau Pipeline Directorate of KazTransOil's Western Branch, bears his name.

Construction of the oil artery began in 1999. On March 26, 2001, filling of the Consortium's pipeline system with oil from the Tengiz field began in Atyrau. The ceremony was attended by Kassym-Jomart Tokayev, then Prime Minister and now President of the Republic of Kazakhstan.

"The participation of Russia and Kazakhstan in the CPC project confirms the strategic vision of balanced use of the Caspian basin's energy potential", Kassym-Jomart Kemelevich said at the ceremony.

CPC's operational and financial success has had a positive impact on the socio-economic development of Atyrau Region. Since 2001, CPC has allocated around USD 3 million a year to charitable causes in Kazakhstan. Its social projects have included building and renovating schools, kindergartens, and medical facilities, along with periodically updating their equipment.

Over the past decade, CPC-supported kindergartens have opened in the Samal and Birlik neighborhoods, in the city of Kulsary, and in the villages of Ganyushkino, Akkol, and Akkistau. Schools were also built in the villages of Zhastalap, Kurylys, and Aktogay in Makhambet District, along with a Youth Center and a family-type Children's Village in Atyrau. In 2025, a school for 900 students opened in the Talgairan neighborhood of Atyrau.

Atyrau Today

In modern Kazakhstan, local government is carried out through elected representative bodies known as maslikhats, and by the executive bodies of administrative-territorial units headed by akims. The position of akim is not elected – it is a presidential and government appointment. The current akim of Atyrau is Shakir Keikin, and the akim of Atyrau Region is Serik Shapkenov.

Photo: Maxim Stadnichenko

Shutterstock / FOTODOM / Nurlan Tastanbekov, Yuri Kuidin / RIA Novosti

Atyrau's unofficial status as Kazakhstan's oil capital was established in 1999, when the country widely celebrated the 100th anniversary of its national oil and gas industry. By 2007, around 300 foreign companies were operating in the city, most of them focused on oil and gas and related services. In 2025, the Council of Heads of State of the CIS awarded Atyrau the honorary title of City of Labor Glory.

July 1, 2011, the ceremony marking the welding of the first joint of the CPC Pipeline System Expansion Project

Today, Atyrau – a major industrial center and key transport hub – continues to develop actively, without losing sight of culture, the environment, and the upbringing of the younger generation. The city offers unique attractions and routes for visitors, including a half-kilometer pedestrian bridge across the Ural River, listed in the Guinness Book of Records, which lets people walk from Asia to Europe and back.

Ural River embankment

In 2020, to mark Atyrau's 380th anniversary, the city upgraded its riverside embankment, making it a more comfortable place for walks and leisure, complete with fountains, cycling and jogging paths, and sun shelters. On the bank of the Ural, there is also a Retro Park designed in the classic style of the 1950s. And, of course, it's worth visiting Victory Park, established in 1975 in memory of the people of Guriev who gave their strength and their lives fighting the Nazi invaders. An eternal flame burns in their honor, and the monuments record how many local residents never returned from the war and how many became Heroes of the Soviet Union.

Photo: Maxim Stadnichenko

The city's main square is crowned by equestrian statues of Isatai Taimanov and Makhambet Utemisov, leaders of the nineteenth-century liberation uprising. Framed by a semicircular arcade with a bronze map of Kazakhstan, the 90-meter Flagpole Monument on the Square of State Symbols lets you see the republic's flag from almost anywhere in the city. And you can see the oil capital from a whole new angle by taking a boat trip along the river.

Coat of arms of Atyrau

Thanks to its well-developed infrastructure, Atyrau – like its twin city Astrakhan – can be considered a fairly self-sufficient city. Today, the city does more than just pump and refine hydrocarbons: it also manufactures railway tank cars and farms sturgeon. Thanks to a policy of employing local residents at major joint ventures, the labor market here is broad for a population of 326,000. Four city universities provide professional training, including a branch of the Gubkin Russian State University of Oil and Gas. Atyrau continues to develop actively, and 2026 – declared the Year of Digitalization and Artificial Intelligence in Kazakhstan – may well bring the city new achievements and improvements.

Monument to Isatai Taimanov and Makhambet Utemisov

Opening of the branch of the I. M. Gubkin Russian State University of Oil and Gas in Atyrau, 2022

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Vertical Takeoff

Today, virtually no major power makes any serious move on the world stage – and sometimes even domestically – without factoring in China. At the same time, these very powers manufacture a huge share of the goods they consume at home in China itself. How did this come about? Let's take a closer look

China's economic rise is one of the most sweeping and remarkable transformations of the late twentieth and early twenty-first centuries. In barely two decades, a country that in the 1970s was still agrarian, poor, and technologically backward turned into the world's largest industrial hub, the second-largest economy on the planet, and one of the key players in global geopolitics.

One point needs to be made from the outset: this path was no accident. China's economic miracle resulted from a complex blend of political will, pragmatism, a national drive to build a powerful state, the use of market mechanisms, and tight control by the authorities. Throughout this process, China's leadership never gave up the Communist Party's political monopoly, carrying out reforms cautiously and in stages.

To understand the nature of China's success, it helps to trace the country's entire journey – from a period of economic chaos through the era of reform, special economic zones, and China's transformation into the "world's factory".

Brief Backstory

Confucius considered imitation the easiest path to knowledge. By the early nineteenth century, the Celestial Empire, ruled by the Manchu Qing dynasty, was a self-sufficient state in its own right, commanding vast vassal territories that included, among others, present-day Korea, Vietnam, and Tajikistan. The Great Wall shielded the empire's northern border from the "barbarians", while the Himalayas formed a natural barrier against an unfriendly India. Its maritime border was guarded through a special ports regime geared heavily toward exports and barely open to imports. A vast corps of mandarin officials effectively translated the nuances of governance, reward, and punishment into practice on the ground.

Gunpowder, silk, mechanical clocks, the compass, paper, porcelain, noodles, and umbrellas all trace their origins to the Celestial Empire. Nineteenth-century China even had its own energy sector – coal mining to supply the metallurgical industry. A number of historians believe the world's first oil well was drilled in China's Sichuan province as far back as the 3rd century BC, along with the first oil pipeline, made of bamboo. Incidentally, China and Japan were still on friendly terms at the time.

China looked ideal only from the inside. From the outside, it resembled a naive Disney princess gradually being surrounded by distinctly suspicious older boys with obvious bullying intentions. The "Great Divergence" between European and Asian states is usually explained by fierce international competition and two industrial revolutions on one side, and a policy of isolationism on the other.

The two Opium Wars, fought (with the Crimean War as an interlude) from 1839 to 1860, aimed to turn China into a colony of Britain and, later, partly of France. Casualties were heavy, and China lost control of Taiwan, Hong Kong, and Vietnam, among other territories.

In 1860, the Qing dynasty – having recovered from military defeat and paid a massive indemnity – proclaimed a policy of "self-strengthening". In some ways, this echoed Japan's Meiji Restoration, then underway.

The drive to "absorb overseas values" led to the founding of a university in Beijing, where Mao Zedong, the son of a wealthy peasant, would later work as a librarian. China began building a steam-powered navy and a rail network. Its army acquired modern weapons and coastal forts.

The self-strengthening policy also had its strategic missteps. Specialists brought in from Germany to improve army and navy training gradually developed their own colonial ambitions in Qingdao. Among the newly trained officers of the Chinese army, a new military elite was taking shape – one that would overthrow the last Qing emperor in 1912 and form the core of the right-wing Kuomintang party.

Stability conducive to economic development was in short supply throughout the first half of the twentieth century. The country effectively splintered into provinces ruled by warlord factions; a near civil war raged between the Kuomintang and the Communist Party, founded in 1921; the two sides then joined forces against foreign intervention; and war with Japan broke out in 1931 and, with some lulls, dragged on until 1945.

Dictatorship of Progress

Mao Zedong, the leader who had shaped the People's Republic of China's fate for nearly 40 years, died on September 9, 1976. His death marked a turning point in the country's history, triggering a power struggle within the party elite.

China's crisis proved relatively short-lived. Soon after, the so-called "Gang of Four" was arrested, with Mao's wife, Jiang Qing, as its central figure. She was blamed for the radicalism of the Cultural Revolution and the mass political repression of that era.

What followed was a gradual overhaul of the previous years' policies. The country began rehabilitating people who had suffered during the Cultural Revolution. Many party officials who had been exiled or stripped of their posts returned to political life. Among them was Deng Xiaoping, the man who would become the architect of China's reforms. In the late 1970s, he put forward the slogan "End the chaos and restore order". But the challenge went beyond simply ending political instability.

Despite all the problems that marked the Great Helmsman's rule, China did see a measure of economic growth. Except during the Great Leap Forward and the Cultural Revolution, the country's economy genuinely grew: from 1950 to 1980, average annual growth stood at around 3%.

In the 1960s and 1970s, the economies of East Asia's "Asian Tigers" – South Korea, Taiwan, Singapore, and Hong Kong – grew by more than 6% a year on average. China's leadership watched these results with envy. Crucially, the Tigers achieved this by embracing market mechanisms, building export industries, attracting foreign investment, and retaining state control over the economy – all under authoritarian political systems.

Looking at the Asian Tigers, Deng Xiaoping and his allies concluded that combining a market economy with tight political control was not only possible but could succeed. China ultimately chose to build its own version of a "developmental dictatorship". The model called for political stability, strong centralized power under Communist Party control, gradual market reforms, and an economy open to the outside world and oriented toward exports.

It was around this time that Deng Xiaoping, echoing Confucius, made his famous remark: it doesn't matter whether a cat is black or white, as long as it catches mice. The line became a symbol of Chinese pragmatism.

Land Revolution

The first step in the reforms was to overhaul agriculture. Most of China's population were peasants with no personal stake in the fruits of their labor. Deng Xiaoping set out to dismantle this system.

In the late 1970s, China introduced the "household responsibility system". Land was handed over to peasant families for long-term use. Each family farmed its own plot, and once it had met its obligations to the state, it was free to do as it wished with the surplus harvest.

The term of land tenure granted to peasants gradually grew from three to five years to 30 years, with the option to extend it further. This proved to be a powerful incentive and delivered a striking result: grain output rose by roughly a third between 1978 and 1985, even though cultivated area and mechanization levels barely changed. By the turn of the 1980s, China had shaken off the threat of mass famine for the first time in centuries – even food rationing was abolished.

Shift to Industrial Growth

Agricultural reform alone was not enough; China's leadership understood the country needed to become an industrial power. An export-oriented economy became the cornerstone of the new strategy. China's key advantage was its vast pool of cheap labor. At the same time, the leadership relied on discipline, the absence of strikes, and tight control over the labor movement.

Over the years, China effectively turned itself into one giant production floor. It imported raw materials and technology, mastered the manufacture of increasingly sophisticated goods, and exported them at prices so low that competition was practically eliminated. The initially poor quality of these goods improved steadily year after year.

Foreign investment was a critical driver of China's leap forward. Following the Sino-Soviet split of the 1960s and 1970s, Beijing began moving closer to the United States. US President Richard Nixon visited China in 1972, and Beijing and Washington effectively formed a tactical alignment against the Soviet Union.

It was in the USA's interest to support China as a counterweight to the USSR, while Western businesses were on the hunt for new manufacturing bases. Given its cheap and abundant labor force (crucial for keeping production costs down) and its political stability (crucial for the payback on investment), China was an ideal fit. Once foreign investors crossed that mental Rubicon, US dollars, British pounds, Japanese yen, and other hard currencies poured into the country.

Special economic zones – sometimes called free economic zones – became one of the key tools of industrial reform. The first four SEZs were established in 1980.

Special economic zones effectively became "capitalist islands" within socialist China. Foreign companies operating there received special treatment: tax breaks, simplified business rules, and the ability to pay wages that barely registered as a cost for employers. It was here that the term OEM (Original Equipment Management) first emerged, referring to the manufacture of high-quality goods under the supervision of, using the technology of, and on equipment belonging to leading global manufacturers.

Moving Away from Rigid Planning

Deng Xiaoping's reforms meant gradually dismantling the centrally planned system. State planning survived, but it was no longer strictly mandatory: enterprises gained greater autonomy. The "dual-track pricing" system was a particularly interesting feature of this period.

State-owned enterprises continued to meet mandatory output quotas and supply goods at fixed prices. But at the same time, they were allowed to buy some raw materials at market prices, produce additional output, and sell it on the open market.

In this way, market mechanisms gradually made their way even into the state sector. Private entrepreneurship began to flourish at the same time.

An interesting feature of China's reforms was the so-called "red hat" system. Many private entrepreneurs registered their businesses as nominally state-owned enterprises. This allowed them to get around restrictions, gain access to bank loans, and deal with the authorities more easily.

Today, the private sector accounts for more than 60% of China's GDP, over 80% of urban employment, more than 50% of tax revenue, and over 70% of innovation.

The results of the reforms were nothing short of phenomenal. Average annual growth ran at around 9.5% in the 1980s and topped 10% in the 1990s and 2000s. Even in the 2010s, growth held at around 7% – an outstanding figure by global standards.

The scale of the transformation is best illustrated by hard numbers. In 1980, China had about 1.7 million cars on the road; by 2020, that figure had reached roughly 280 million. The country built the world's largest high-speed rail network: by 2020, China had about 38,000 km of high-speed lines – two-thirds of the world's total.

Average life expectancy in China rose from 64 to 78 years, and hundreds of millions of people moved from villages to cities. By the late 2010s, China had become the world's leading manufacturing base, producing electronics, clothing, appliances, cars, industrial equipment, and much more. Virtually every major global corporation had production operations in China. In effect, the country underwent the largest industrialization in human history.

National Energy Sector of Its Own

Today, China ranks first in the world in oil consumption, second in refining, and sixth in production. As the country transformed into the "world's factory", domestic oil fields could no longer keep pace with soaring demand. And it wasn't just about supplying industry and transport – China also had to build and replenish a strategic oil reserve, in which it now leads the world (holding 167 million tonnes as of May 1, 2026).

In an earlier article on the Strait of Malacca, we noted that 80% of China's oil imports pass through it. At the same time, analysts widely agree that Russia and Saudi Arabia are China's two leading oil suppliers, together accounting for roughly a third of its import "pie". There's no contradiction here: in 2025, Russia supplied 271,000 tonnes a day via the Skovorodino – Mohe and Omsk – Alashankou pipelines, alongside tanker shipments from the port of Kozmino. Saudi Arabia, for its part, shipped 216,000 tonnes a day by tanker through the Strait of Hormuz and the Strait of Malacca. China currently buys oil from 37 countries, hedging against possible supply disruptions caused by political or other factors.

In 2023, China's crude oil and NGL production totaled 229 million tonnes, of which about 50 million tonnes came from offshore fields. Its leading field remains Daqing ("Great Celebration"), discovered in 1959, with proven reserves of 6 billion tonnes.

AI generated

By 2004, China's energy needs could no longer be met without 100 million tonnes of imported oil. PRC President Hu Jintao proposed establishing pipeline deliveries of oil from fields in Russia and Kazakhstan. That same year, construction began, with Chinese investment, on the Atasu – Alashankou pipeline, which in 2006 began carrying oil from Kazakhstan's Kumkol field and fields in Aktobe Region into China. Since 2023, this pipeline has also carried Russian Urals-grade crude to China.

The Skovorodino – Mohe pipeline, a spur off the Eastern Siberia – Pacific Ocean trunk line, was commissioned in 2010. It has a design capacity of 30 million tonnes of ESPO-grade crude a year.

The year 2013 marked three significant milestones for China. Xi Jinping became President of the PRC, he unveiled the international Belt and Road Initiative, and, as a pilot project under that initiative, oil deliveries began flowing into China through a 2,400-kilometer pipeline from Myanmar. On December 15, 2025, the Zhongxin news agency reported that over eight years of operation, the China – Myanmar oil pipeline had carried more than 88 million tonnes of crude oil.

Staying out of OPEC does not mean Chinese oil companies are strictly isolationist – they remain quite open to cooperation and the exchange of expertise. A case in point is CNPC's membership in the International Association of Oil Transporters (IAOT). The organization's latest meeting, held in Qingdao in June 2026, gave the host plenty to show and tell. Chinese pipeliners, in turn, expressed strong interest in the use of artificial intelligence in oil transport operations, a topic that has since gained momentum as a joint development effort with Russian and Kazakh counterparts.

China's Economic Miracle: Results and Prospects

China's development path differed markedly from both the Soviet model and Western "liberal capitalism". The population did not see the reforms as a break with socialism but as a way to strengthen the state – and as a result, factory workers genuinely put in the effort rather than going through the motions.

China's miracle stands as the largest example of "catch-up development" in modern history. In just a few decades, China made a powerful leap from an agrarian, poor country with little international standing and a hungry population to a mighty industrial superpower with the world's largest consumer market, now playing a leading role in global politics.

The story of China's economic rise shows just how powerful a combination of pragmatism, state control, and market mechanisms can be. The country continues to evolve today. Under Xi Jinping, some of the rules set during the Deng Xiaoping era have been revised, and the role of the state and political control has grown stronger.

China's development over recent decades has hardly been a smooth, uninterrupted climb. There have been crises, periods of "overheating", and bursting economic "bubbles". A telling example is the 2023 bankruptcy of Evergrande Group, China's largest property developer, which rattled not only the construction sector but the stock market as well. Modern China's "ghost cities" – housing complexes built for millions but home to only a few thousand residents – are the flip side of the national economy's success.

Temporary setbacks can shake the unity of party and people anywhere – except, perhaps, where people still remember Confucius's words: true greatness lies not in never falling, but in falling and rising again. GDP growth may be slowing, but the essential work has been done. China's economic miracle stands as one of the defining events in modern world history – one that has shifted the global balance of power and shaped the course of the world in the twenty-first century.

Full text of the article on the website:

AUTHOR

Angelika Kim

Shared Space for Knowledge and Neighborly Ties

CPC is opening new horizons for international cooperation in education. In June 2026, teachers of Russian language and literature from Atyrau Region came to Astrakhan to learn new teaching methods

Workshop on game-based and interactive teaching technologies

Boris Kustodiev's palette

Under the dome of the Kurmangazy Sagyrbayuly Museum

Education begins with the teacher. It is the teacher who helps a child make their first discoveries, learn to think, respect their own history, and understand the cultures of other peoples. That is why teachers' work is an investment not only in a school's development, but in the future of a district, a region, and a country.

This philosophy is close to the Caspian Pipeline Consortium's long-standing charitable work. Through its large-scale social projects in Kazakhstan, CPC-K consistently invests in education, healthcare, culture, and sport, helping to create the conditions for a good quality of life. The latest step on this path was the educational program "Modern Methods of Teaching Russian as a Foreign Language in a Multicultural School", successfully delivered in Astrakhan for teachers from Atyrau Region on June 29–July 3, 2026.

At the Crossroads of Cultures

It is no coincidence that Astrakhan – one of the oldest cities on the Caspian – was chosen to host the program. Having become a southern outpost of the Russian state in the sixteenth century, Astrakhan has always stood at the crossroads of peoples, languages, and cultures.

On Astrakhan's streets, Christian churches sit alongside Muslim mosques, theaters alongside merchant courtyards, and old merchants' mansions alongside eastern bazaars. The history of the Kazakh people is closely intertwined with the history of the city itself. It was here that the great Kazakh composer Kurmangazy Sagyrbayuly lived and worked, and the city preserves a rich cultural heritage that tells the story of centuries of coexistence among the peoples of the Caspian region. Astrakhan itself thus became part of the educational program. Visits to museums, cultural centers, and historical monuments let the teachers see firsthand how language, literature, and history help people understand one another better.

Learning to Teach

Twenty-one teachers of Russian language and Russian literature from schools across Atyrau Region took part in the program. Over five days, they explored modern methods for teaching Russian in a bilingual environment, studied new educational technologies, exchanged experience with Russian colleagues, and put their new knowledge into practice.

Special attention was paid to building teachers' multicultural competence, developing students' communication skills, and creating a comfortable language-learning environment. During the program, the teachers visited the Astrakhan Kremlin, toured the Velimir Khlebnikov house-museum, and saw original paintings by Boris Kustodiev.

Each excursion doubled as a lesson in cross-cultural communication, offering a fresh perspective on the history of the two neighboring states and a deeper understanding of how to teach Russian in a multilingual environment.

Speaking at the opening ceremony, Nikolay Gorban, General Director of CPC, emphasized that developing

education is one of the priorities of the Consortium's social policy.

"We initiated this program in Atyrau Region, one of CPC's regions of presence. Teachers don't just pass on knowledge – they shape the worldview of future generations. That's why investment in education is always an investment in society's future", said the head of the Consortium.

Over the years, CPC has carried out dozens of social projects in Atyrau Region: building schools and kindergartens, equipping medical facilities with modern equipment, and supporting educational institutions and cultural initiatives.

"Today, Kazakhstani and Russian teachers have a chance to learn modern methods, exchange practical experience, and identify the most effective approaches to teaching", Nikolay Gorban noted. "We're confident that this platform for humanitarian and professional dialogue between our two countries will strengthen friendly ties and bring real benefit to the teaching community".

New Knowledge, New Inspiration

For the participants of the educational program, the trip was more than an ordinary training course.

Kurmangazy Sagyrbayuly's mausoleum in Altynzhar

"Every day was a genuine source of inspiration, new knowledge, and professional growth for us", says Shynar Sarmanova, a teacher of Russian language and Russian literature at the Isatay Taimanov school in Atyrau. "This trip opened up new horizons for us and gave us a fresh perspective on modern teaching approaches. Every single day was packed. We took part in an intensive session on scenario planning for educational materials. The topic turned out to be highly relevant, interesting, and, most importantly, practical. We came away with plenty of ideas we'll definitely use in our work".

The program was structured so that teachers attended training sessions in the mornings and went on sightseeing tours of Astrakhan and the surrounding area in the afternoons.

"The city, with its rich history and unique architecture, made a strong impression on us", Shynar Sarmanova continues. "But the most memorable moment for me was visiting the regional Kurmangazy Sagyrbayuly Cultural and Ethnographic Center. The visit to the great kyuishi's mausoleum was especially moving. It was a truly stirring moment – to touch history and honor the memory of a man whose invaluable contribution to Kazakh culture continues to inspire generations".

Samal Saginganova, a master teacher at the Zholdaskali Dosmukhambetov Atyrau Regional Lyceum, agrees with her colleague:

"I teach Russian language and Russian literature in classes where instruction is in Kazakh, so the topic of the program – 'Modern Methods of Teaching Russian as a Foreign Language in a Multicultural School' – was especially relevant for me. All my expectations were fully met from the very first day of training".

On their very first day, the teachers from Atyrau were shown the film "Autumn Marathon" by their Russian colleagues. The film's attempt by a Danish Slavic studies professor, Bill Hansen, to probe the linguistic depths of locksmith Vasily Kharitonov's speech, with interpreter Andrei Buzykin acting as go-between, is not only comedic – it also offers a compelling illustration of the challenges involved in learning and teaching Russian as a foreign language.

"Watching several films on similar themes highlighted the real challenges facing both teachers and students in the language-learning process", notes Assel Berdigaliyeva, a teacher of Russian language and Russian literature at the Mukhtar Auezov school in Inder District. "There's the accurate translation of idioms, lexical barriers, stylistic registers, and much more that needs to be taken into account when teaching".

According to Samal Saginganova, her school has children who come from remote parts of Atyrau Region and speak almost no Russian.

"That's why modern approaches to teaching Russian specifically as a foreign language turned out to be a real professional discovery for me", the master teacher notes. "The Russian instructors showed us how to structure an introductory lesson properly, how to help a child overcome the language barrier, spark their interest, and create a comfortable language environment. We shared experience in scenario planning for educational materials, communicative teaching methods, techniques for developing spoken language, and ways of comparing features of Russian and Kazakh that make it easier for children to master new material. The practical sessions were especially valuable, where we modeled lessons ourselves, analyzed various teaching scenarios, and looked for the most effective solutions. Every day of training revealed something new. I'm going back to Atyrau with a huge store of knowledge, new ideas, and a desire to share them with my colleagues. I'm confident this experience will help make our lessons more modern, engaging, and effective for children".

Learning techniques for semanticizing vocabulary andlanguage games over a film screening

For Bagdagul Nurmanova, a teacher-researcher at Secondary School No. 18, named after Mendekesh Satybaldiyev (Zhylyoi District, Kulsary), the trip to Astrakhan became one of the most vivid and substantive training courses of her career.

"I'm happy I had the chance to take part in this educational program", says Bagdagul Nurmanova. "In forty years of teaching, I've completed many professional development courses, but this one stands out as the most memorable. It was especially valuable to learn from Russian colleagues who teach Russian using two different methodologies – as a native language and as a foreign one. Despite my many years of experience, I came away with an enormous amount of new knowledge and methodological ideas. We studied modern teaching approaches based on the semantic analysis of language units, learned how to adapt teaching materials to different proficiency levels, how to account for how today's children perceive information, and how to make effective use of digital educational technology. A real discovery for me was the use of memes, infographics, interactive digital resources, and associative techniques in class to build students' vocabulary. We learned new ways of working with word translation, finding vivid linguistic associations, and building our own lexical models. Creative exercises like these make language learning lively, engaging, and memorable".

According to Bagdagul Nurmanova, an unforgettable experience was the visit to the house-museum of the futurist poet Velimir Khlebnikov, who coined a number of neologisms still used in the Russian language today.

"This excursion opened up new pages of Russian literature for me", says the teacher, who has 40 years of experience. "The program organized by CPC was a genuine source of inspiration. It significantly expanded my professional toolkit and gave me confidence that a modern teacher must keep developing, mastering new technologies, and staying current. Most importantly, I can now pass on what I've learned to younger colleagues, so that modern teaching methods can work for the benefit of our students".

Sharing their impressions, the teachers from Kazakhstan's oil capital agreed that getting to know Astrakhan's cultural life was a valuable part of the educational program.

"We were struck, with great respect, by how carefully Kazakhs living in Russia preserve their native language, traditions, and national culture, passing them on to the younger generation", says Shynar

Excursion to the Velimir Khlebnikov house-museum

Sarmanova. "Visits to cultural centers and meetings with representatives of the Kazakh diaspora were also part of the educational program – a lesson in patriotism and respect for one's roots. We are grateful to CPC for the opportunity to take part in such a large-scale educational project. This isn't just a professional development course – it's a unique platform for exchanging experience, professional dialogue, and personal enrichment".

More Than Corporate Social Responsibility

Government representatives also praised the project highly. Maria Shalak, Minister of Education and Science of Astrakhan Region, expressed hope that the initiative would continue and become a cherished tradition.

"This educational program was developed by the Ministry of Education and Science of Astrakhan Region together with the Ministry of Education of the Republic of Kazakhstan, and is being carried out with the support of the Caspian Pipeline Consortium", said Maria Shalak. "I consider this humanitarian project highly important and necessary. We hope that, with CPC's support, Kazakhstani and Russian teachers will gain a great deal of new and useful knowledge for their professional work".

Kanat Khassenov, Consul General of the Republic of Kazakhstan in Astrakhan Region, for his part, emphasized that improving teachers' qualifications is a vital investment in the future of the younger generation, and that professional cooperation between teachers from the two countries helps develop a shared humanitarian space.

A Project With a Sequel

The educational program is part of a broader humanitarian initiative carried out by the Caspian Pipeline Consortium.

Before the end of summer, as part of a project for the mutual exchange of literature, books by Kazakhstani authors will be delivered to 480 state and municipal libraries in Russian regions along the CPC pipeline route, while works by Russian writers will be added to the collections of 208 school libraries in Atyrau Region.

Initiatives like these show that modern partnership isn't built on economic cooperation alone. It also takes shape in classrooms, university lecture halls, libraries, and museums – the very places where the worldview of future generations is formed.

By supporting education, then, the Caspian Pipeline Consortium is helping to build not just infrastructure, but a space of trust, mutual respect, and good neighborliness between Kazakhstan and Russia. And it is projects like these that lay a solid foundation for the continued development of the entire Caspian region.

AUTHOR

Pavel Kretov

Serving All the Southwestern Kuban

CPC has supported healthcare workers in Krasnodar Krai since its earliest years of operation. In Novorossiysk, this support goes in particular to the Children's City Hospital and the ambulance station. After visiting both facilities, we learned how healthcare for the youngest patients is organized and how the "03" emergency service operates in this Hero City

In 2027, the Children's City Hospital of Novorossiysk will mark its 60th anniversary. Although it is a city hospital, it is actually located in a rural area – the village of Myskhako, in a picturesque spot almost right on the seashore. Today, around 70,000 children live in the municipality – three times as many as when the facility opened in 1967. The hospital also has so-called inter-district beds for neonatal intensive care and pathology. This means severely ill patients can be admitted here from towns such as Abinsk, Anapa, Gelendzhik, and Krymsk, and even from Krasnodar itself when the regional capital has no beds available.

"The Krasnodar Krai Ministry of Health and many of the city's leading enterprises, including CPC, provided substantial support in modernizing the intensive care unit", says Chief Physician Larisa Ulyanchenko, who has led the hospital since 2010. "As a result, our hospital's capabilities are held in very high regard at both the municipal and regional levels".

The hospital has a total capacity of 101 beds across four departments. The front line is the admissions department, which not only receives patients for subsequent hospitalization but also provides emergency care to those who don't need to be admitted. The early childhood department has 29 beds for children from three months to three years old, with a nurse on duty around the clock to care for infants.

The older children's department, covering ages 15 to 18, has 44 beds spread across 13 wards. Another 28 beds are in the neonatal pathology department. Thanks to round-the-clock nursing coverage, infants can stay in the hospital either alone or in "Mother and Child" rooms. The admissions department connects directly to the anesthesiology and intensive care unit, which includes a resuscitation room and four wards for intensive care and critical treatment. The Children's City Hospital does not, however, have its own outpatient clinic.

"For certain types of diagnostics, including ophthalmology and ENT, we have to transport children to City Hospital No. 1, which creates extra difficulties", explains Larisa Ulyanchenko. "That arrangement may have made sense in the past, but with the growing population, Novorossiysk would be better served by a multidisciplinary children's hospital".

FIGURES

101 beds – capacity of the Children's City Hospital

29 beds – early childhood department

44 beds – older children's department

28 beds – neonatal pathology department

Up to 50 tests conducted daily in the laboratory

Mobile Equipment

The hospital's cooperation with CPC dates back to 2012. Young patients receive gifts from the Consortium on holidays – Children's Day and New Year.

"But of course, the most valuable thing is modern equipment", notes Head Nurse Olga Fominykh. "For instance, the functional beds in the intensive care unit – with mechanical lifts and side rails that are comfortable for severely ill patients – have been a major help to our doctors".

Medical staff are also grateful for the mobile X-ray and ultrasound diagnostic units. Mobility matters a great deal here: these units can be wheeled right up to the bedside of a child on a ventilator. Other gifts from the Consortium include an autoclave for sterilizing instruments, phototherapy lamps, aspirators, and IV infusion pumps. Laboratory staff, who run up to 50 tests a day, are pleased with the illuminated microscopes, which improve

result accuracy while also reducing eye strain for lab technicians.

But the chief physician's greatest source of pride is her highly professional team. Head Nurse Olga Fominykh has 48 years of experience, and many doctors and nurses have worked here for 30 years. The Rural Doctor program helps attract staff from other regions, and new graduates arrive from the medical college. The hospital takes part in job fairs and grows its own talent, too: former orderlies go on to become nurses.

Nearly a Third of the Fleet

Speed of response is especially critical in medicine. Novorossiysk's ambulance station has been part of City Hospital No. 1's structure since 2018.

"Twenty-one vehicles with crews go out on the road every day", says Andrei Polyakov, Deputy Chief Physician for Emergency Medical Care at City Hospital No. 1. "We have six substations: Central (which also houses the dispatch center), Verkhnebakanskaya, Natukhayevskaya, Rayevskaya, Abrau-Dyurso, plus substations in the city's Southern and Eastern districts. This spread lets crews meet the mandated 20-minute response time for emergency calls such as heart attacks and strokes. Average response time for traffic accidents is just 15 minutes".

The dispatch center takes calls on 103 and 112, and calls can even be redirected from Anapa. Crew qualifications vary: there are paramedic crews (a paramedic and a driver) and physician-led crews (a doctor, a nurse, and a driver). For emergency calls, the station always tries to send a physician-led crew. Urgent (non-emergency) calls are handled by whichever crew is free, though response times here typically stay under 20 minutes as well.

FIGURES

6 ambulance substations

21 vehicles with physician-led and paramedic crews

500,000 km – ambulance fleet mileage over five years

300 patients treated daily

The Caspian Pipeline Consortium donated six ambulances to the station's fleet: two vehicles in 2023 and another four in 2026.

"All the vehicles are built on the GAZelle NEXT platform, which matters a lot", Andrei Polyakov emphasizes. "The Ford Transit vehicles we bought earlier are harder to get parts for. GAZelle parts are available everywhere and cost less".

Class A equipment specifications call for ambulances to carry stretcher trolleys, air recirculators, air disinfection units, breathing kits with oxygen cylinders, defibrillators, pulse oximeters, first-aid kits, as well as obstetric, burn-treatment, epidemic-control, and catheterization kits.

The radio-equipped vehicles log 40,000 to 50,000 km a year, or a quarter of a million km over five years. Given how far some substations are – a 40 km trip to the hospital and 40 km back – a single hospitalization can add up to nearly a hundred kilometers of ambulance mileage. Emergency medical teams treat around 300 patients every day.

As we can see, both facilities serve not only the Hero City and its surrounding areas within their respective fields, but effectively the entire southwestern Kuban region.

The importance of consistently supplying the children's hospital and the ambulance station with advanced, reliable equipment seems self-evident: saving young, still-developing bodies from illnesses of every severity, and doing so in time, remains one of modern medicine's most vital tasks.

AUTHOR

Maria Gnezdilova

Waterfront Formula

Three things I knew about karting before this: it's a technical sport you can take up from a young age, it delivers a huge rush of vivid experiences, and it does a remarkably good job of shaping character, turning teenagers into racers chasing a silver dream and skilled hands-on engineers in the making. The racing family of Konstantin Grzhebin, our lead technical specialist, gave me a much broader picture

Konstantin, how long have you been karting and at what level? How and why did you get into the sport?

I'm an amateur – I only got behind the wheel of my first kart relatively recently, even though I'd dreamed of motorsport since early childhood. For as long as I can remember, toy cars were my favourite thing, and on television I always preferred watching car racing. Once Formula 1 broadcasts arrived here, my hero was the Finnish driver Kimi Räikkönen, who raced for McLaren-Mercedes. I always wanted to get behind the wheel myself and try my hand at motor racing.

Where did you finally get to drive a kart? And how developed is this infrastructure here these days?

I got my driving licence at 18, but as I said, I only took up karting fairly recently. At the time we were living in Sevastopol, our son Gleb was eight, and one day my wife took him for a ride at an ordinary rental karting track. He came back so full of excitement that I decided to keep it going with him – and try it myself while I was at it.

When we moved to Novorossiysk, it turned out there was a kart track nearby, close to the Malaya Zemlya memorial, with its own karting school, Patriot 23. Back then the school only took children, so we enrolled our son, while mum and dad ended up as the mechanics. These days, incidentally, there are classes for adults too.

Who teaches at the school, and what do they teach?

The school has several levels. Our son trained there for a year before he was invited to move up to the professional karting group, even though that step usually takes about two years. The group is coached by the Korneev brothers, Ivan and Grigory, both prize-winners at Russian and European championships. Kids in the "pro group" are also prepared for city, regional and national competitions. Each one is assigned their own kart – and by this point it's no longer a rental machine with two pedals, but a serious, adult-grade rig with a more powerful engine, a clutch and a gearbox.

So essentially a racing car?

You could put it that way. A genuine racing kart accelerates to 100 km/h in just over three seconds. In competition, pro karts reach speeds of 100–140 km/h on a lap, depending on the track layout. These machines offer less passive safety than an ordinary car, but the drivers are protected by helmets and clothing with impact-resistant inserts. Active safety matters just as much – driving technique and reaction speed. At the school, the kids don't just train on the track; there's also a "paddock", a repair area where they learn to service, repair and set up their machines, adjusting the factory settings.

And what about safety in the repair area?

All work on the machines and on the machine tools – drill press, lathe, milling machine – is carried out under a coach's supervision. The kids are issued personal protective equipment: goggles, gloves and so on. When I found out my son had been trusted to work on a machine tool, I went to check for myself and confirmed that everything there is safe.

What are race conditions like?

There are sprints – races for speed – and marathons – races for endurance. Either way, deliberately causing collisions on the track is forbidden, and so is racing with an open helmet visor. A flag system is used to signal drivers. Green means start. Red means the race is stopped for some reason. Yellow flags mark a slow car on the track that must be overtaken with care. A blue flag tells a driver to give way to the race leader, who has already lapped the rest of the field.

Do you have your own karts in the family, or do you rent?

Our son has his own machine – we decided that would be better and bought it for his birthday. First, he takes better care of his own things than of rental equipment. Second, it's safer to race on your own kart: you know exactly what condition it's in, whereas a rental can spring unpleasant surprises. And third, kids who own their own karts are far less drawn to the temptations of so-called "adult life". Alcohol, vapes – there's simply no time or money for that. It all goes on spare parts.

Did your son like the gift?

He loved it. The kart arrived half-assembled, in a huge box about a metre by two metres. He put it together himself, like a construction kit, and that was an extra source of enjoyment.

Is this an exclusively male sport?

Not at all – there are plenty of girls at the karting school. They compete just as well, and, right alongside the boys, they get their hands dirty in the repair bay working on engines and changing tyres. They're covered in oil and petrol from head to toe, but they clean up after the races.

How is your son doing now?

A couple of wins in the "Hobby" category, though he hasn't reached first place in the professional competitions yet – he's already brought home silver and bronze from city and regional events. There are frustrating retirements too, when the equipment lets him down: once, on the last lap, a spark plug wire burned out in Gleb's kart, and he finished second instead.

▸ And how is your own progress in karting?

◂ I took third place in the North Caucasus Cup – I was there with my son as his mechanic, but ended up racing myself, and in wet conditions to boot.

Skills picked up on the kart track turn out to be useful for handling an ordinary car in the city, in the rain for example. There are no pit stops on a kart track, so during rain the tyres stay on and you have to learn to brake and manoeuvre on what are effectively slicks – with minimal grip on the road.

There's another benefit: once you've built up racing skills, you become calmer and more careful on ordinary roads. For fans of aggressive driving, I'd recommend the kart track – it lets off steam and teaches them what's what.

▸ We once published an observation that the most stress-resistant and considerate people in the office are MMA fighters. It looks like the same sporting principle is at work here. How often do you need to train to build that kind of Olympic calm?

◂ My son and I usually went to the kart track every Saturday, and spent every weekday evening after work in the garage. Unfortunately, the track at the karting school has now been dismantled for the whole summer: since it's located on the waterfront, holidaymakers don't care for the smell of petrol and the roar of engines.

▸ As an athlete, what's your view – does Novorossiysk need a permanent, purpose-built kart track?

◂ The city does have rental kart tracks, but no professional one. I think it needs one. Right now, a high-quality track has been built at Malaya Zemlya, but as I mentioned, it's dismantled every summer – the infrastructure is stuck in "temporary" status.

That's why it's not possible to hold professional competitions in Novorossiysk. There was a chance to host a round of the Russian championship in the city this summer, but, again, we weren't even allowed to keep the track up until mid-June.

The karting school has no mains power or running water – we have to use rainwater for washing hands, and burn petrol not just for racing but for the generator as well.

In summer, the Korneev brothers' pro group has nowhere to train, so they head off with their coach to towns that have the facilities they need. They tow the karts on trailers, repair them out in open fields, and cook their own food. It's like a summer camp trip, only more exciting and with more adventures. I went along with them once – I ended up rebuilding an engine in the middle of the night, while the coach taught the kids how to change crankshaft bearings, re-press connecting rods and weld a frame. I agree every school needs its holidays, but if Novorossiysk had a permanent professional kart track, I don't think it would sit idle in summer.

The USSR had around five thousand kart tracks; no more than five hundred are left today. This sport demands good physical conditioning but doesn't wear the body down – you can start at ten and already have medals and driving skills by twelve to fourteen, which matters a great deal for a teenager's self-esteem and drive in life. As a technical sport, karting builds character and strengthens both stamina and resilience. All in all, a permanent professional kart track would serve both the driving school and the city well – it could host competitions up to Russian championship rounds, which would be both profitable and prestigious.

Safe Work Culture News

CPC Panorama presents the Safe Work Culture Leaders for Q1 2026 – employees of the Consortium and its contracting organisations

Alexander Bodrov
Instrumentation Technician, PS-5A
Noticed a missing warning sign during equipment repair work, preventing accidental power-up and protecting colleagues from the risk of electric shock injury.

Inessa Bazhina
Lead HR Specialist, Marine Terminal
Helps colleagues understand the values of Safe Work Culture. Provides guidance on completing observation cards and takes part in running «Safety Minutes» sessions. Has repeatedly reported various risks and hazards through observation cards.

Alexei Popov
Senior Engineer, Oil and Gas Pipeline Operations, PS Kropotkinskaya
Identified unstable scaffolding while preparing for work. Ensured all structural defects were fixed before work began, preventing a collapse risk and securing safe working conditions for the crew.

Rakymzhan Gubaidullin
Operator, Process Installations, PS Tengiz
Exercised his Stop Work Authority upon spotting a hazard during a lifting operation carried out without tag lines.. Briefed staff on the issue, minimising risks during load handling.

Sergei Kumzin
Head of the Emergency Response Unit, Tengiz, KazTransOil
Identified a damaged wheel on a mobile OP-100 fire extinguisher and promptly requested its repair, restoring the readiness of fire safety equipment.

Sergei Zlenko
Security Officer, Nachin LLC, Marine Terminal
Acted quickly to stop workers from standing under a crane's boom, then explained the issue to those involved and alerted management – reducing the risk of injury.

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CASPIAN PIPELINE CONSORTIUM

Since 2015, under a cooperation agreement, CPC has worked with Gubkin University, Russia's leading oil and gas higher education institution. Many of the university's graduates go on to work at CPC, putting the knowledge they gained there into practice. The partnership's first major project was the renovation and modernisation of the V. N. Vinogradov Grand Lecture Hall.

In 2016, CPC provided a record number of school buses to municipal and state-funded educational institutions in the rural districts of Stavropol Krai, supplying 67 passenger vehicles. The region gained modern transport fully equipped for the safe, comfortable transportation of children.

In 2013–2014, CPC carried out its largest charitable project in Novorossiysk: the construction of Kindergarten No. 18, "Treasure Island", in the village of Glebovskoye. The kindergarten has everything needed for the comfortable stay of 350 children, including a swimming pool. Using its own funds, CPC furnished the facility with furniture, kitchen, computer, laundry and ironing equipment, toys, and playground equipment.

In 2018, in just nine remarkable months, a two-storey Multidisciplinary Centre for Culture and Arts for Children was built in the settlement of Iki-Burul, Kalmykia – the Consortium's largest charitable project in the Republic.

In 2017, CPC carried out one of its largest charitable projects in Krasnodar Krai: a full renovation of Secondary School No. 37 in the village of Staromyshastovskaya, Dinsky District. The project delivered 14 specialised modern classrooms, a gymnasium with showers and toilets, an assembly hall, a modern canteen with dining space for 80, and a medical room.

At the end of 2017, young children in the village of Ganyushkino, Kurmangazy District, Atyrau Region, moved into a new home: a 200-place kindergarten built by CPC. The facility has a total floor area of more than 2,000 m². The two-storey building accommodates eight groups of 25 children each, aged three to seven.

In 2025, a new school for 900 pupils opened in the Talgairan neighbourhood of Atyrau. Using CPC charitable funding, contractors built a three-storey building with a total floor area of more than 12,000 m². The school has 36 classrooms, each designed for 25 pupils. Language classrooms are equipped with language-lab systems, while the chemistry, biology and physics laboratories have the specialised equipment needed for practical lessons.

In 2024, CPC completed a major charitable project to improve access to qualified medical care for residents of the rural district near the Consortium's Marine Terminal. Over several years, two feldsher-obstetric stations (FAPs) and two general practitioner's offices (GP offices) were built for the villages of Severnaya Ozereyevka, Yuzhnaya Ozereyevka, Vasilyevka and Glebovskoye. The GP offices function as full mini-polyclinics, each with paediatric, ophthalmology and gynaecology rooms, an ultrasound diagnostics room, treatment and vaccination rooms, and an analytical laboratory.

CPC: 30 YEARS OF GOOD DEEDS

CPC's charitable activities began in 1998, even before construction of the new pipeline system got under way. One of its first major areas of focus was support for veterans of the Great Patriotic War, labour veterans, people with disabilities, and lonely elderly people living in social care institutions.

One of CPC's longest-running charitable partnerships has been with School No. 31 in the village of Glebovskoye, Novorossiysk Municipal District. The school has received school buses, computers, canteen equipment, furniture, air conditioners and interactive whiteboards.

The first "CPC for Talented Children" festival was held in 1998. It traditionally takes place in the regions along the route of the CPC pipeline and its production facilities: the Republic of Kalmykia, Astrakhan Oblast, and Stavropol and Krasnodar Krai.

Near the village of Dinskaya (Krasnodar Krai) is the rowing base of District Children's and Youth Sports School No. 1. Founded in 1982, the school has produced more than a hundred Masters of Sport and champions of the USSR, Russia, Europe and the world. In 2010, CPC bought the base new boats and a pontoon jetty.

On 15 November 2018, the Ministry of Culture of the Russian Federation recognised CPC's charitable work with the "Patron of the Year" award. The award is a mark of state recognition and gratitude for preserving and developing the country's cultural heritage, and for supporting outstanding projects and achievements in the arts.

During construction and operation of the CPC pipeline, archaeologists have uncovered a wealth of unique finds and rare artefacts along its route. These were presented to the wider public in 2014 in Krasnodar, in the halls of the Felitsyn State Historical and Archaeological Museum-Reserve. Extensive research has given Russian scientists a complete picture of every stage of human settlement in the Kuban region, from the Bronze Age to the Middle Ages. In 1998, construction of the CPC pipeline in Stavropol Krai led to the discovery of the third-century BC "Ipatovo Princess" burial mound – considered the most important 20th-century archaeological discovery in Scythian-Sarmatian studies.

In 2014, the Caspian Pipeline Consortium launched the Protect Nature of Our Native Land project. It aims to raise environmental awareness among young people, foster respect for nature, and help preserve populations of rare animal and plant species. The project includes open lessons and creative competitions.

On 10 September 2022, Novorossiysk hosted its first symphonic music festival, “Novorossiysk Chimes”, supported by the Caspian Pipeline Consortium. Held on Forum Square, it drew an audience of around 3,500. Having immediately established itself as a major cultural event for the city, it was decided to make the festival an annual fixture.

In 2015, CPC was a partner of the first All-Russian Children’s Environmental Festival, “Ecodetstvo”. Held under the slogan “Children of Russia for Nature Conservation!” to mark World Environment Day and Children’s Day, the festival took place across 85 constituent regions of the Russian Federation.

In 2016, a new charitable giving policy came into force for CPC-R and CPC-K. The document was drawn up by the Department for Government Relations of the Russian Federation, with input from Kazakh colleagues and the Internal Control Group. The policy helps avoid uncertainty over whether a given project is worthwhile, sets out clear transparency requirements for each one, and helps strengthen CPC’s reputation as a socially responsible company.

In 2002 and 2012, CPC staff helped Krasnodar Krai deal with the aftermath of major flooding. In 2012, for example, an extra 20 million roubles were allocated for the Kuban region on top of existing charitable programmes. The funds were used to buy outdoor play equipment, furniture, catering equipment and bedding for six kindergartens in Krymsk District. In 2024, CPC took part in flood-control work in Atyrau Oblast: to support the large-scale effort, a convoy of special vehicles from CPC-R travelled from Astrakhan to assist CPC-K.

In 2016, an equestrian arena was officially opened in Krymsk District, Krasnodar Krai. CPC donated the complex, along with supporting equipment and specialised horse transport, to the centre. The arena’s size allows 130 riders to train there year-round, regardless of weather. In its very first season, 2016, the centre’s athletes won more than 80 awards at regional and national competitions.

In 2009, CPC began a charitable partnership with the Rus Social Rehabilitation Centre in Astrakhan Oblast. The centre has eight departments, including medical rehabilitation units for children and adults offering physical and social rehabilitation, restorative treatment, kinesiotherapy and other services. It provides free social and medical assistance to people with disabilities, low-income families, and children in difficult life circumstances.

CPC-R’s charitable support for educational institutions in the Consortium’s regions of operation spans almost three decades. Over that time, six schools have been built or renovated, and CPC has donated 273 school buses to educational institutions. Under the “CPC for First-Graders” programme, the youngest pupils receive backpacks with school supplies ahead of each new school year.

In the Republic of Kazakhstan, CPC has provided ongoing charitable support since 2000. In the mid-2010s, the Atyrau Regional Maternity Hospital was rebuilt into a modern perinatal centre in Atyrau Region, and a 160-place kindergarten was opened in Atyrau. Kindergartens were built in the town of Kulsary and the village of Akkistau. Eight schools across the region and in the city of Atyrau underwent major renovation, and ambulances were purchased. A Children’s Village and a Youth House were built in Atyrau.

In 2017, pupils at School No. 59 in the settlement of Shkolny heard the first-day-of-school bell twice – on 1 September and again on 10 November, when they moved into a new building financed by CPC. That same year, another educational institution in Krymsk District, School No. 16 in the village of Moldavanskoye, also received support under CPC’s charitable programme: the Consortium built a gas-fired boiler house and a transformer substation there.

In 2017, CPC carried out a major refurbishment of Polyclinic No. 2 in Novorossiysk. The 1956-built facility was renovated and its floor area expanded by 200 m². Builders replaced all utilities, the roof, floors, windows and doors, and reinforced the walls using the shotcrete method.

In late 2017 and early 2018, three kindergartens were brought into service in Astrakhan Oblast in quick succession – to date, the largest charitable project CPC has carried out in the region. The first kindergartens were built in the villages of Baibek and Starokucherganovka. The programme’s final addition was the Malyshok kindergarten in the town of Kharabali, which eliminated the local waiting list for pre-school places for children aged three to seven entirely.

In 2018, CPC donated a state-of-the-art angiography unit to Alexander-Mariinsky Hospital in Astrakhan. The equipment brought the regional hospital’s diagnostic and treatment capabilities up to some of the best standards in the world. With this technology, doctors can perform highly complex cardiovascular procedures without a scalpel or general anaesthetic, and examine and treat blood vessels in the legs, neck, head and heart. The angiograph lets doctors view the area under examination in 3D – essential for treating cerebrovascular disease and effectively managing aneurysms.

In 2018, Novorossiysk saw the opening of a Children’s Tennis Centre and the “Pobeda” archery complex. All the work involved, including design, was funded by CPC. No sports facilities of this scale had been built in the city in more than 30 years.

In mid-May 2019, a new district children’s polyclinic opened in the town of Izobilny, Stavropol Krai – a significant milestone for a district with a population of 100,000, one in five of whom are children or young people.

In September 2019, CPC donated to Kirov Hospital in Astrakhan 10 ventilators with respiratory volume monitoring, 21 five-parameter patient monitors (measuring oximetry, non-invasive blood pressure, ECG, respiratory rate and body temperature), and five anaesthesia machines fitted with a respiratory unit, volumeter, and monitors for oxygen and carbon dioxide concentration and breathing-circuit integrity.

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