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IV Investors' Voice

The American Chamber of Commerce in Kazakhstan

Kazakhstan's leading International Business Association

October 2021
AUTUMN ISSUE
#95

COP 26 - the Global Climate Change Summit
Planning for the Future



- Frontier Power Technologies for Kazakhstan
- TotalEnergies – a World-Class Player in Energy Transition
- Taking Actions to Reduce Methane Emissions
- Transformation of the Energy Industry
- Demystifying Digital Transformation
- Fueling Progress Through New Ways of Working
- Getting to Net Zero by 2050
- Kazakhstan's Mission Impossible? How to be a Hero of Net Zero


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EDITOR'S NOTE



Dear Readers,

This year's *Autumn Investors' Voice* is a very special Issue at a time when the oil and gas industry and many other industries providing the world's essential energy and power system are engaged in the implications of energy transition to resolve the challenges of climate change. This enquiry will take center stage during the *U.N. COP26 Climate Change Summit* in Glasgow in November, a profound consideration of the dramatic impact of global climate change that has increased year by year, reaching inescapable worldwide consequences this past year.

Kazakhstan will be a participant in *COP26* when the country's President, Kassym-Jomart Tokayev, attends the Summit together with other world leaders. As a country reliant on the affluence derived from its oil industry for its national budget, Kazakhstan is in the process of considering other avenues and natural resources that will enable it to diversify its economy and to make use of its abundant resources and talents. For many years Kazakhstan has debated economic diversification and in recent years it has prioritized the many forms of renewable energy at its disposal, yet it has lagged behind Europe and other countries where renewables have long been in development. Kazakhstan is 'behind the curve' and needs to catch up to countries that are strategizing a new future for all of us.

The articles published in this Issue of *Investors' Voice* are sharply focused on COP26 and its implications. Thus, we have expanded the traditional oil and gas focus to include other forms of energy that co-exist with the oil industry – not replacing it but working with it as the oil industry itself considers how best to make the necessary energy transition. This is a universal undertaking for the industry with its many leading companies, each considering an effective approach to decarbonization conforming to their own profile and their own future - a crucial task requiring the industry's best minds to look into the future.

The *Autumn Investors' Voice* contains a wealth of opinion from many perspectives: from the leading oil companies that have brought Kazakhstan its wealth and stability - *Chevron, Shell, ExxonMobil, TotalEnergies, Eni*, the consortia of *Tengizchevroil (TCO)*, *Karachaganak (KPO),* and the *North Caspian Operating Company (NCOC)*, to oilfield service providers such as *Schlumberger,* from power industry leaders *GE* and *BASF*, recruitment sources such as *Fircroft*, electricity companies such as *Emerson Electric*, financial services and law firms such as *Deloitte, PricewaterhouseCoopers,* and *Kinstellar*, from the global giant *Microsoft*, and from the Turkish conglomerate *Borusan Group*.

Doris Bradbury
Editor-in-Chief, *Investors' Voice*

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Saule Baitzhaunova began her career as Chief Specialist at the Kazakhstan Ministry of Information in 2003. Between 2004-2011 she served as BASF Regional Director for North and East Kazakhstan, after which she was appointed Sales Head of the BASF Construction Chemicals Division, then promoted in 2013 to Country Manager of the Construction Chemicals Division. She has served as BASF Managing Director and Head of the Central Asia Country Cluster since 2016.

Saule Baitzhaunova holds a Bachelor's degree in Social Psychology and a PhD In Political Science, both from Ankara University in Turkey.



Myrat Annayev, Country Manager Turkmenistan / Market Development Central Asia, BASF Central Asia

Myrat Annayev has been employed by BASF and the BASF Group since September 2010, first serving in Government Relations and Administration with Wintershall Holding (BASF Group), then directly with BASF in Turkmenistan, transferring to BASF Central Asia in his current position as Market Development Manager in 2017. He has also been the Area Manager for BAT in Ashgabat and has worked for Nabors Drilling International in various positions both in Turkmenistan and in Kazakhstan.

Myrat Annayev has studied at the International Turkmen-Turkish University and received his degree in English Philology in 1999 from Azadi Institute of World Languages, both in Turkmenistan.

Borusan Group



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Zafer Aksakal is the Borusan EPC Leader, appointed in 2018. He is responsible for Engineering, Project Management and Proposal functions in the Energy and Transportation Industry in 6 countries. He also leads business development in Solar, Hybrid and Micro-Grid energy systems. Before Borusan Cat he worked for the Siemens Energy Group.

Zafer Aksakal graduated from Yildiz Technical University with a degree in Electrical Engineering and pursued a Master's degree in Electrical and Computer Engineering from the New York Institute of Technology.

Deloitte



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Originally from Deloitte in the UK, Anthony Mahon spent three years working for Deloitte in the Middle East and joined Deloitte CIS in 2012. He leads Deloitte's Caspian Energy & Resources practice across all service lines. A Tax Partner who specialises in international tax, mergers and acquisitions and restructuring, he advises a range of Kazakhstan's most significant subsoil users.

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Olessya Kirilovskaya is Director of the Tax and Legal Department of Deloitte Kazakhstan in Almaty. She has over 14 years of experience in legal consulting in Kazakhstan, including on Kazakhstan's oil and gas legislation, structuring of transactions, environmental issues, and other areas of legislation.

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Emerson



Stuart Harris, Group President, Digital Transformation, Emerson Automation Solutions

As Group President of Digital Transformation for Emerson, Stuart Harris leads a business responsible for leveraging Emerson's technologies and expertise to help drive business performance for key industries. His more than 30 years of international experience in automation and asset management within the process industries includes leading strategic planning, global marketing, digital strategy and industry programmes for Emerson's Automation Solutions business.

Stuart holds 10 US patents for software, information integration and visualisation.

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Eni



Luciano Vasques, Central Asia Regional Head, Eni

Luciano Vasques joined Eni in 1991 as a Project Engineer, acquiring broad experience in both development and operations. In 2000, he moved to London and then to Aksay as Progect Director for the Karachagak Phase II development. He continued to participate in Kashagan, first in the Netherlands as Development Director and then in Atyrau as Director of the Kazakh branch of AgipKCO.

In 2009 he was appointed President and CEO of Eni Petroleum, the North American E&P subsidiary of Eni. From 2012 to 2013 he was Senior Vice President for Buisiness Development at Eni Gas and Power. He was appointed Central Asia Regional Head for Eni on 1 August 2020.

Luciano Vasques holds a MSc degree in Electronic Engeneering from Politecnico in Milan.

Fircroft



Maxim Gubashev, General Director, Regional Finance Director, NES Kazakhstan /CIS

Maxim Gubashev joined Fircroft in 2018 as Country Manager for Russia and in 2019 was promoted to the General Director's role in Kazakhstan – the largest Fircroft operation in the CIS. This role was combined with the position of CIS Regional Financial Director. In 2020 NES Global Talent and Fircroft Group merged to form a new company – NES Fircroft.

Maxim Gubashev has a degree in International Financial Management and 22 years' experience in financial and general management in large international and local companies within the CIS.

Kinstellar Law Firm



Joel Benjamin, Managing Partner, Kinstellar, Law Firm

Joel Benjamin has been working in Kazakhstan for over 25 years. During that time, has been involved in many high-profile and ground breaking transactions. He is Managing Partner for the Central Asia practice of Kinstellar and manages its offices in Almaty, Nur-Sultan and Tashkent. He advises international and local clients in energy, oil and gas, mining, banking, telecommunications and media.

Joel Benjamin comes highly recommended by *Legal 500*, *Chambers Global*, *IFLR 1000, Who's Who Legal* and *Best Lawyers in Kazakhstan*. He is recognised by *Chambers and Partners* ***Global Guide 2020 - 2021*** as the only Eminent Practitioner in Corporate and Finance and is ranked for Energy and Natural Resources.



Maksim Grekov, Of Counsel, Kinstellar

Maksim Grekov is Of Counsel in the Kinstellar Almaty office. He has over 25 years of experience advising major international and local companies in Kazakhstan and other Central Asian countries spanning a wide range of practice areas, including M&A and general corporate, banking and finance, including debt & equity capital markets, derivatives and other financial products.

Maksim Grekov is often engaged in high-value financial transactions for major banks, funds and corporations. He is ranked among the top practitioners in Kazakhstan by *Chambers Global* and *IFLR1000*. For a number of years he has been consistently recognised by Chambers & Partners as a leading lawyer in Corporate & Finance.

Microsoft



Sergey Leschenko, Country Manager, Microsoft Kazakhstan

Sergey Leschenko has over 20 years' experience in the field of telecommunications, mobile products, and innovative technologies. As the Microsoft Kazakhstan Country Manager, he is engaged in the company's strategic development, the digital transformation of Kazakhstani customers and partners, and for the country's digitalization projects, a Microsoft priority in the local market.

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Gumyrbek Sandibekov is an experienced Business Development Manager and a certified Project Manager with over fifteen years of experience in the Oil & Gas industry in South East Asia, Europe, North Africa and Former Soviet Union. He joined Microsoft in 2019 where he leads projects in Oil and Gas, Telco, Mining, and Transportation. Before Microsoft he worked with the Expro International Group as Executive Director and Head of the Moscow Branch.

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Richard Bregonje began his career in PwC Netherlands as Team Leader for taxation of natural resource companies, and has been with PwC for over 28 years. Joining PwC Kazakhstan in 2006, be consults oil and gas entities, as well as clients from the mining sector on taxation, including corporate tax, value added tax, and withholding tax. He has also developed the ESG (environment, social responsibility and governance) practice, including application of Kazakhstan's new Environmental Code, EU crossborder carbon regulation, and renewable energy sources.

Richard Bregonje holds a degree in Tax Law from Tilburg University and a Master's degree in Civil Law and Business Law from Rotterdam Erasmus University.

Schlumberger



Rob Fox, Schlumberger Managing Director, Kazakhstan and Uzbekistan

Rob Fox has nearly 25 years' experience with Schlumberger, working in many managerial positions, both in operations and support roles. His international career has included postings in Europe, Australia, Malaysia, UAE, and the United States. He was promoted to his current role as Managing Director for Schlumberger in Kazakhstan and Uzbekistan in December 2019.

Rob Fox is a Chartered Engineer holding a Bachelor's degree from Bath University and a Master's degree from Brighton University in the UK.

Shell



German Burmeister, Senior Vice President & Country Chair, Shell Kazakshtan

German Burmeister has over 30 years of experience in the Oil and Gas Industry, the last twenty years with Royal Dutch Shell (RDS). Prior to joining Shell in 2001, he worked in Argentina, Bolivia and Peru, including new business development, LNG trading, governance of non-operated assets, power, upstream commercial and operations. Before his assignment in Brazil, he served as RDS Vice President of Strategy and Competitive Intelligence Group. Following the RDS merger with BG in 2016, German Burmeister led the Deepwater business in Brazil. German Burmeister holds a Petroleum Engineering degree from Instituto Tecnologico de Buenos Aires (1994) and an MBA from Instituto de Altos Estudios Empresariales (1997) in Buenos Aires. He is an Argentinian national.

Tengizchevroil (TCO)



Benjamin Priddy, Executive and Communications Lead, Tengizchevroil

Benjamin Priddy leads the executive and workforce communications team at Tengizchevroil (TCO) and is responsible for determining strategy, developing content, and executing plans to support the General Director and TCO Leadership Team in communicating and engaging with a workforce of over 50,000 people at Kazakhstan's largest oil and gas producer. He is an accomplished corporate affairs leader with over a decade of public and government relations experience in the U.S., Europe, Russia and Eurasia. He has served previously in government affairs and communication roles with Chevron in Washington, D.C. and California.

Benjamin Priddy is trilingual (Russian, German and English) and holds a Master's Degree from the Georgetown University School of Foreign Service and a Bachelor's Degree from Louisiana State University.

Total E&P Kazakhstan



Ahlem Friga-Noy, Country Chair/ Managing Director, Total E&P Kazakhstan

Ahlem Friga-Noy is a seasoned public affairs, geopolitical adviser, and negotiation expert with 20 years' experience in the public and private sectors. Before joining Total, she was Advisor on Sub-Saharan Africa to the French Minister of Foreign and European Affairs and to the French Minister for Cooperation. Before this, she held a number of positions in the field of multilateral diplomacy.

From 2012 to July 2016 Ahlem Friga-Noy was Corporate Affairs Manager at Total E&P Uganda, and in 2016 she was appointed Vice President Public Affairs – Africa Division for Total Group. In August 2019 she became Country Chair and Managing Director for Total E&P in Kazakhstan.

Ahlem Friga-Noy holds a Master's degree in Public Law and a Bachelor's degree In International Law.

ExxonMobil

Taking actions to reduce methane emissions

"Around the world, nations and governments, including Kazakhstan, are progressively focusing their attention on the risks of climate change. In our industry, likewise, the focus is on addressing the dual challenge of providing affordable energy while reducing environmental impact. As a long-term partner of the Republic of Kazakhstan, ExxonMobil supports the country's ambition to achieve carbon neutrality by 2060. Our industry is working together with the Republic to help develop a low carbon framework that will balance the need to grow economy while also addressing the risks of climate change. I believe that with joint efforts we can arrive at a sound policy that will benefit Kazakhstan and all involved parties. As Kazakhstan is setting ambitious goals in its GHG reduction, it is my pleasure to share ExxonMobil's corporate experience of taking practical steps in the same direction."

Dinesh Sivasamboo,
Managing Director of ExxonMobil Kazakhstan Inc.

ExxonMobil is committed to reducing methane emissions in its operations, as well as advancing technology and policy to make progress across the industry in a cost-effective manner.

Operations

ExxonMobil implemented a program across its U.S. unconventional production to reduce methane emissions from new and existing sources by:

- Enhancing leak detection and repair surveys.
- Phasing out high-bleed pneumatic devices.
- Monitoring liquid unloadings to avoid unplanned releases.
- Improving facility designs.
- Furthering training programs for operations management, superintendents, foremen, facility engineering personnel and those involved in leak inspections.

In addition, the Company continues to mature and operationalize research and technology developments in these areas. For example, emerging aircraft leak detection is now part of routine monitoring campaigns. Continuous monitoring approaches are also under development.

Since initiating its voluntary methane reduction program, the Company has conducted nearly 23,000 leak surveys on more than 5.2 million components at more than 9,500 production sites. High-bleed pneumatic devices have been eliminated across U.S. unconventional production as of 2020. As a result of these actions, U.S. unconventional methane emissions have been reduced by nearly 18 percent as of 2019, compared to 2016, which is equivalent to about 33,000 tonnes.

Advocacy

ExxonMobil respects and supports society's ambition to achieve net-zero emissions by 2050, and continues to advocate for policies that promote cost-effective solutions to address the risks of climate change. In this regard, ExxonMobil submitted a letter to the U.S. Environmental Protection Agency rulemaking docket indicating support for reasonable, cost-effective regulations to manage methane emissions from new and existing sources. ExxonMobil submitted a similar statement to the European Commission as it was developing a methane strategy for the European Union. The Company also published a model framework for industry-wide methane regulations and urged stakeholders, policymakers and governments to develop comprehensive, enhanced rules to reduce emissions in all phases of production and across the full natural gas value chain.

In addition, ExxonMobil was a founding member, and remains highly involved in the Methane Guiding Principles – an international multi-stakeholder initiative now comprising more than 20 companies and 15 supporting organizations that work together to address methane emissions across the full natural gas value chain. Under the Methane Guiding Principles, ExxonMobil is a primary sponsor of the IEA's Methane Tracker, aweb-based information portal that provides information on global emissions, mitigation measures, and regulatory approaches. The Company also participates in the Methane Guiding Principles' non-operated joint venture and policy-related work streams.

ExxonMobil supports strong measurement, reporting and verification standards as part of a broad suite of regulations to address oil and natural gas related methane emissions. To that end, the Company is actively engaged with organizations such as the Oil and Gas Climate Initiative, the Collaboratory for Advancing Methane Science, the Environmental Partnership, and the Methane Guiding Principles, mentioned on the previous page, to continue to improve the accuracy and transparency of how industry approaches methane emissions measurement, reporting and verification. ExxonMobil participates in the recently formed International Association of Oil & Gas Producers/IPIECA/OGCI Task Force for Recommended Practices for Methane Emission Detection & Quantification Technologies.

ExxonMobil is also working with trade associations to encourage consensus on the need to develop policy positions and/or best practices on methane emissions inventory and management, as well as technology and innovation, most recently for example, with the American Exploration & Production Council (AXPC), the Natural Gas Supply Association (NGSA) and the Argentinean Institute for Oil and Gas (Instituto Argentino del Petróleo y del Gas, IAPG).

Unconventional production progress

~18%

Methane reduction across U.S. Unconventional production as of 2019

~100%

High-bleed pneumatic devices phased out across U.S. Unconventional production as of 2020

Research and technology

Reducing methane emissions in oil and natural gas operations is an important way to reduce global greenhouse gas emissions. Advances in technology can help detect and identify the sources, and improve the ability to respond quickly.

ExxonMobil is working to find new and better ways to monitor and reduce methane emissions through a new collaboration, known as Project Astra, involving universities, environmental groups and other industry partners. Together, the partners are working to develop an innovative sensor network in Texas that continuously monitors methane emissions across large areas to enable quick and efficient detection and repair of leaks. This high-frequency monitoring system will enable operators to more efficiently direct resources to a specific location and could provide a more affordable, efficient solution to reduce methane emissions.

In addition, the Company is testing novel analytical systems that can be deployed in helicopters, airplanes and drones to detect fugitive emissions. The Company is also exploring the use of satellite surveillance where data can be regularly updated each time satellites orbit the earth. These technology investments complement the Company's voluntary methane management program that includes structured leak detection and repair protocols, prioritized replacement of high-bleed pneumatic devices, and infrastructure enhancements.

In space

Emissions can be detected by satellite surveillance technology. The data can be updated each time the satellite orbits the earth.



In the air

Using helicopters and airplanes, ExxonMobil is trialing four different airborne technologies fitted with methane sensors to detect and quantify emissions. *Photo courtesy of Scientific Aviation.*



On the ground

ExxonMobil is also testing a ground-based leak detection system that combines research in sensing technology, plume modeling and data analytics to identify leaks for repair.



Fueling
Progress



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FUELING PROGRESS THROUGH NEW WAYS OF WORKING

by Benjamin Priddy
Executive and Workforce Communications Lead
Tengizchevroil

Since 1993, Tengizchevroil (TCO) has been on a continuous journey of growth, high performance, and progress to create value for Kazakhstan and its shareholders. Along the way, TCO has invested in growing production, remained committed to delivering safe and reliable supplies of energy and given back to the communities where we operate. As a result, our workforce, communities, Kazakhstan itself, and TCO shareholders have experienced the positive impact and value of TCO's successes.

Yet at TCO, it is recognized that past performance doesn't guarantee future results. In an era of rapid technological change, competition for capital and disruption to traditional ways of working, companies must remain flexible and adaptive to changing conditions in order to remain competitive in the dynamic landscape. Driven by the company's vision of being the safest, most efficient and profitable oil and gas enterprise, TCO is on a transformational journey to adopt new ways of working, unlock the exceptional talents of our workforce, and position the company to win in any environment.

Teaming Across the Value Chain

In 2019, TCO adopted a new integrated value chain operating model. Similar to other large operators in the oil and gas industry, the value chain represents the activities that occur to find, develop, produce, market, and deliver hydrocarbons to its customers.

Within a value chain operating model leaders apply a teaming mindset to remove siloes in the organization, align the workforce around common strategic objectives, and establish an environment of high trust and common purpose. The teaming mindset helps create transparency, enable information sharing and speed up decision making by integrating workflows and prioritizing resource allocation. By adopting this mindset leaders are building teams focused on activities that create the most value for the company, which is critical in today's environment of almost constant change.

Over the last two years, TCO's implementation of the value chain operating model has helped create significant value including in reduced well drilling costs and cycle time in projects, increased production capacity of operating plants, avoidance of plant downtime and optimized maintenance schedules. A key enabler of the success of teaming across the value chain is the adoption of *Agile* methods.



Adopting *Agile*

At TCO, *Agile* is not just a framework, it is also a philosophy that encourages the right behaviors and helps teams find solutions that generate value for the company. Adopting an agile mindset is about creating and responding to change in an evolving culture and adapting quickly to new circumstances, market conditions or new insights. Applying these positive agile attributes and behaviors are strengthening TCO's organizational culture and increasing the speed of value delivery.

TCO's *Agile* journey began in the *Information Technology (IT)*, or *Digital*, function through a series of pilot projects. After producing significant improvements in delivery time, customer satisfaction and costs through the application of agile project methodology, TCO established a *Decision-Making Center of Excellence* to train the workforce and champion the adoption of *Agile* across the entire organization.

Today, almost every function in TCO is applying some *Agile* techniques and each month more employees are being trained and building fluency of *Agile* practices. In TCO's Projects organization, each new opportunity goes through an evaluation phase using the *Agile* framework. A result of this is significant reduction in evaluation and delivery time and an improved employee experience

While the value chain operating model emphasizes teaming and *Agile* helps cultivate innovation, integrity, ownership and trust across the workforce, a third tool – *Minimal Function Objective* – is helping drive a stronger focus on returns in support of TCO's unwavering commitment to create value for Kazakhstan and TCO shareholders.





Applying an Investor Mindset through Minimal Functional Objective

Minimal Functional Objectives (MFO) is best described as the adoption of a cost disciplined investor mindset to help drive higher returns. *MFO* is applicable across a range of business activities and involves a bottom-up, value focused approach to making decisions, with a focus on capital projects.

MFO starts with clearly defining a problem, identifying its lowest cost solution or *Minimum Functionality Case*, and justifying enhancements or adjustments based on business need. The *MFO* approach turns a cost-cutting exercise into a value-adding one by mitigating loss aversion, a cognitive theory stipulating that the pain of losing something is greater than the pleasure of an equivalent gain.

MFO is a new concept at TCO that encourages teams to adopt an investor mindset when making decision on investments. When we challenge ourselves to solve for a low-cost solution first, it drives us to do more with less, leading to higher returns.

Fueling Progress

TCO's journey of fueling progress is driven by an unwavering commitment to deliver value to and TCO shareholders. Our journey of continuous performance improvement is continuing through the adoption of new ways of working.

The value chain operating model, *Agile* and *MFO* are engaging our people differently and leveraging their energy and exceptional capabilities to deliver competitive results. So far, the experiences of the workforce in adopting new behaviors and building new competencies have generated excitement and energy around the future of the company and we look forward to continuing this journey in the years ahead as we prepare for an era of rapid growth.



CELEBRATING GROWTH AND PROGRESS.

A quarter of a century ago, Chevron recognized the potential in Kazakhstan. Together, with our partners, we've invested billions in the Kazakhstani economy. Created tens of thousands of jobs. And we've become the country's largest oil producer. In fact, Tengiz Field is now among the top producing oil fields in the world. That's taking potential and turning it into progress. Today and for many years to come. **Learn more at chevron.com/worldwide/kazakhstan**

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Chevron

human energy®

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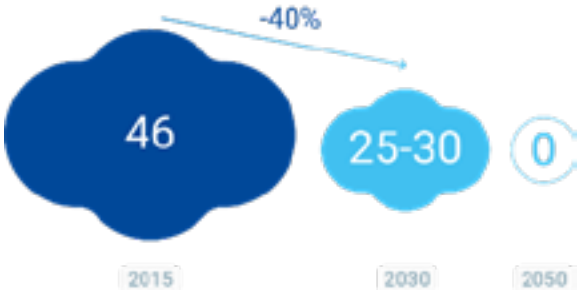
TOTALENERGIES – A WORLD-CLASS PLAYER IN THE ENERGY TRANSITION

One year ago, Total had committed to a new climate ambition to achieve carbon neutrality by 2050 or earlier. On May 28th of 2021 a totally new strategy to become a broad energy company and meet the dual challenge of energy transition: more energy and less carbon, was presented by the Total CEO Patrick Pouyanné to all company shareholders and was endorsed almost unanimously.



This day marks a completely new chapter for TotalEnergies, the new name and new logo of the former Total SA Group, which embarks on a major transformation of its business approach towards more sustainable energy mix, fully supporting the global *Climate and Sustainable Development* objectives, and with a clear vision and ambition of becoming a world-class player and an industry leader in the energy transition. We are moving to become a multi-energy company active in oil, natural gas, solar, wind, electricity, biomass and hydrogen, benefitting all our stakeholders.

The objectives we had committed to may seem quite challenging. But nevertheless, as a responsible energy major, not only we see the need to meet the global growth in energy demand, but also the need to meet the *Paris Climate Agreement* objectives, which calls to reduce greenhouse gas emissions and limit the average rise in planetary temperatures well below 2°C from pre-industrial levels.



Reducing our direct emissions to Net Zero by 2050 (in MtCO2e)

The TotalEnergies strategy is based on four main pillars:

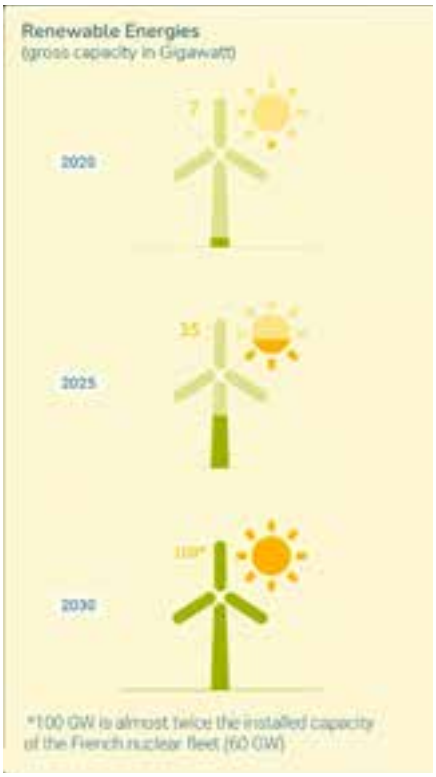
1) ***Focusing on Natural Gas, Biogas, and Hydrogen*** *by expanding in liquified natural gas (LNG) and developing renewable gas, promoting natural gas as an ally of the energy transition, for electricity generation, heating, and travel*

2) ***Building a World Leader in Electricity*** *by investing in low-carbon electricity, mainly from Renewables, and developing an integrated model, from production to sale*

3) ***Decarbonizing and Saving Liquid Energies*** *by focusing on the most resilient oil projects by preferring value to volume, adapting our refining capacity and sales to changing demand and increasing our production of renewable fuels*

4) ***Developing Carbon Sinks*** *by continuing to invest in natural carbon sinks – forests, regenerative agriculture, and wetlands – and technologies for the capture and storage of CO2*

To put it in a simpler words, TotalEnergies will continue to excel in traditional oil and gas business by not increasing the production volumes, but by applying our best innovations and expertise to reduce emissions and increase the long-term value, as this approach will help us to sustainably support and finance investments into the growth of our new energies' portfolio.



Our plan is to significantly increase the share of the "greener" energies and electricity business in our energy mix by investing consistently in Renewable energies (Wind and Solar in particular), produce more renewable fuels, and promote use of the natural gas which helps the energy transition from energy intensive and high emission fossil fuels to a much cleaner energy in a smooth and a sustainable way.

Our target is to be among the world's top 5 in Renewable Energies by the year 2030. And in the next decade, the Company's sales of oil products are expected to diminish by almost 30%, and TotalEnergies' sales mix will become 30% oil products, 5% biofuels, 50% natural gas and 15% electrons, primarily of renewable origin.

TotalEnergies also intends to reduce the carbon footprint of its business activities through negative emissions. The Group is investing in two major carbon sink solutions: natural carbon sinks, such as forests, regenerative agriculture and wetlands, and carbon capture and storage (CCS).



Success of the company is never possible without strong support by our employees, stakeholders, and partners. *Safety, Respect for Each Other, Pioneer Spirit, Stand Together* and *Performance-Minded* – these are the five major values representing TotalEnergies shared commitment, our history, our identity, our vision, and which help us in guiding our day-to-day business in all the countries where TotalEnergies operate, including Kazakhstan.

Speaking of our activities in Kazakhstan, it is perfectly in line with the Company's new strategy and committed objectives, but as well with the ambition of the country to achieve carbon neutrality by 2060. Starting with Elf, then Total, and now as TotalEnergies, we've been actively present in Kazakhstan since 1993. With the main asset of the Kashagan oilfield we, together with our consortium partners, managed to develop the world-class facilities both onshore and offshore in the sensitive North Caspian environment.



There are two things we are especially proud of about Kashagan:

- *first*, it has always been at the forefront of the technologies in terms of environment protection and zero flaring policy applied from the very design stage.

- *second*, the project is leading in terms of safety and efficiency of the facilities and operations, successfully reaching the 400 thousand barrels per day capacity.

Today we continue to export oil and sulfur to international markets and in August of 2021 we have marked the 100th vessel with Kashagan oil (TotalEnergies' share) shipped to TotalEnergies and our partner refineries.

We will continue to work on further expansion of this unique oilfield capacity towards 500 thousand barrels per day and potentially well beyond, ensuring excellence in cost effectiveness and discipline, applying best international standards, promoting local content and creation of world class local service providers for our operations here.



Another good asset we acquired in 2018 along with the global purchase of the Maersk Oil company is the *Dunga* field in Mangistau region, where TotalEnergies is now the operator (with 60% share, alongside with Oman Oil and Partex). On July 4th of 2019 we extended the PSA of Dunga for another 15 years and started implementation of investment Phase 3 worth of 300 mln. USD. This will help us to extend the plateau and oil production level from its current 15 thousand to 20 thousand barrels per day, add production of more than 70 million barrels of reserves, and ultimately support a sustainable employment and economic development in Mangistau region.

Success in a traditional oil & gas business helps us a lot to pursue our path and strategy towards New Energies development. Started in late 2019 our subsidiary Total Eren successfully brought on-stream two solar projects with overall 128 MW capacity in the South of Kazakhstan (namely, *28 MW Nomad project in Kyzylorda* region and *100 MW M-KAT project in Zhambyl* region).



Going further and supporting Kazakhstan's ambition in Renewable energies sector development, Total Eren in conjunction with Saft (our another world-class provider of the industry leading batteries/power storage solutions) are continuously working with the Kazakhstan Government and national companies to develop renewable energy projects that will apply all the world-class solutions in order to meet the growing demand for electricity production while ensuring the grid stability and power balance. These efforts will also contribute to the endeavors of Kazakhstan to increase the share of renewables in the energy mix.



The TotalEnergies Marketing and Services branch is working actively on expansion of the distribution and logistics network for our lubricant products in Central Asia, from 2013 that work has been coordinated from the office in Almaty. And Saft is working closely with key operators in oil & gas, air and railway transport, and other industries in Kazakhstan providing the world's best power storage solutions.

In TotalEnergies we always position ourselves as a responsible energy major and we have always been an active contributor and supporter of social activities and local capacity building.

I'm glad that our projects on local human capital development and talents support have received the highest praise from the Kazakhstan Government and personally from the First President, Nursultan Nazarbayev. With the Kazakhstan Welding Institute project, for example, TotalEnergies has helped Kazakhstan become the 55th fully-fledged member of the International Institute of Welding and helped to establish here a complete system of professional training for all categories of welders, as well as certification of facilities and personnel via top international ISO standards in Welding.



We have also helped to establish strong professional connections and run joint educational programs between top universities and research centers of Kazakhstan and France, including *I'ENA, IFP, University of Strasbourg, Nazarbayev University, Academy of Public Administration, KBTU* and others.

In 2018 we started our *Energy Summer School* in Kazakhstan with the assistance of the TotalEnergies' *Professors' Association*, where our experts with 30-40 years of practical professional experience deliver lectures on a wide range of traditional and new energy industries, as well as cross-discipline topics to all our partner universities around the world.



Through NCOC and Dunga social infrastructure programs we are helping the regional infrastructure development and invested millions into construction of schools, sport facilities, youth clubs, roads, electric lines, cultural centers, museums, libraries, parks, squares, and many other important facilities especially in Atyrau and Mangistau regions. Besides the infrastructure, we provide support for the vulnerable groups and promote Inclusivity, Diversity, and Safety for the benefit of local society.

In 2020 with the pandemic having an unprecedent impact on our lives everywhere, in TotalEnergies we could not stay aside and provided all possible assistance to Kazakhstan to help to improve the Healthcare system and medical facilities, and so for the overall value of 2.4 mln. USD directly from TotalEnergies as well as through NCOC, Dunga, and Total Eren we purchased a large range of medical equipment for hospitals in Atyrau, Mangistau, Kyzylorda, Zhambyl regions and Nur-Sultan (including ventilators, tomographs, masks, sanitizers, and other important supplies). We also donated a number of laptops to schools and children from vulnerable families to help them adapt to the online regime so they could efficiently continue their education.

Finally, TotalEnergies had always actively promoted strong business and cultural ties between Kazakhstan and France. We play an active role in the *Kazakh French Business Council, Chamber of Commerce and Industry France-Kazakhstan*, collaborate closely with leading associations including *KAZENERGY, Foreign Investors' Council, AmCham*, and we will continue on this important mission in line with our highest business principles and devotion.

Looking forward, it is very encouraging to see how Kazakhstan positions itself in the current world trends and developments. Especially regarding decarbonization of the economy – we at TotalEnergies are fully supporting the clear ambition presented by President Tokayev for Kazakhstan to become carbon neutral by year 2060.

As Co-Chair of the *Low Carbon Development Working Group* and the *Energy Working Group* under the *Foreign Investors' Council* umbrella together with our partners from the Kazakhstan Ministry of Energy and Ministry of Ecology, Geology, and Natural Resources, TotalEnergies will bring its best expertise in Carbon footprint reduction and help Kazakhstan to decarbonize its economy, develop advanced and cleaner technologies in the traditional oil and gas sector, create new economic industries and unlock new investment opportunities.



In conclusion and looking towards the 30th Anniversary of Kazakhstan's Independence, Kazakhstan has made huge progress in all spheres of business and social life over the past 30 years. TotalEnergies has played and continues to play its part in the unlocking of country's economic and energy industry potential.

There is a lot of work, a new journey, and many new challenges and opportunities ahead, but TotalEnergies will continue to strengthen its strategic partnership with Kazakhstan and support sustainable development, while maintaining the highest industry standards and business ethics.

ENI AND ENERGY TRANSITION

by Luciano Vasques
Head of Central Asia Region
Eni

Sustainable Development Goals (SDGs) | Eni Video Channel

Seven years ago, anticipating crisis in the traditional energy sector, Eni decided to change. As a result, today Eni is a stronger, faster and more resilient company – one that wants to be instrumental in the process of energy transition towards a low-carbon future. This is demonstrated by Eni's new mission, which is based on the *Sustainable Development Goals (SDGs)* set by the *United Nations (UN)* to achieve sustainable global growth, both economically and socially.

The new mission represents more explicitly Eni's path to face the global challenges, contributing to the achievement of the UN SDGs and clearly addressing the actions to be implemented by all the involved players.

Eni's mission reinforces the principles that underpin its business model. The company recognizes that the energy sector's biggest challenge is balancing maximum access to energy with the fight against climate change. This is why Eni changed its energy mix with a view of reducing its impact on the planet. Eni's model integrates sustainability in all its operations: from the reduction of greenhouse-gas emissions to respect for the environment, from human rights to staff training, and from the promotion of local development to universal access to energy.

The values that inspire Eni's new mission are reflected in its business model based on the three pillars of long-term carbon neutrality, operational excellence and creation of alliances for local development.

Eni organically combines its business plan with the principles of environmental and social sustainability, extending its range of actions along these three pillars.

First of all, Eni business is constantly focused on *operational excellence*. This translates into an ongoing commitment to valuing people, safeguarding both the health and safety of people and asset integrity, protecting the environment, respect for human rights, resilience and diversification of activities and ensuring sound financial discipline. These elements allow the company to seize the opportunities related to the possible evolutions of the energy market and to continue on the path of transformation.

Second, Eni's business model envisages a *decarbonisation* path towards carbon neutrality based on an approach oriented to emissions generated throughout the life cycle of energy products and on a set of actions that will lead to the total decarbonisation of processes and products by 2050. This path, achieved through existing technologies, will allow Eni to totally reduce its carbon footprint, both in terms of net emissions and in terms of net carbon intensity.



The *third guideline* refers to alliances for the promotion of development through the *enhancement of the resources* of the Countries where it operates, promoting access to electricity and promoting *Local Development Programmes (LDPs)* with a broad portfolio of initiatives favouring local communities. This distinctive approach, referred to as Dual Flag, is based on collaborations with other internationally recognized players in order to identify the needs of communities in line with the *National Development Plans* and the *United Nations 2030 Agenda*. Eni is also committed to creating job opportunities and transferring its know-how and expertise to its local partners.

Eni's business model is developed along these three pillars by leveraging internal expertise, the development and application of innovative technologies and the digitalization process. A fundamental element of the business model is the *Corporate Governance system*, inspired by the principles of transparency and integrity, outlined further in the Governance section.

At the presentation of 2021 Q2 report, *Eni Chief Executive Officer Claudio Descalzi* said*:*

"It was, indeed, one of the best quarters of the last ten years, with outstanding results in all sectors. We are optimistic, and solid in the path we have taken. Over the last seven years, we have built the Eni of the future. Our transition goes beyond the development of solar and wind energy: it also includes circular economy initiatives, biorefineries and the technologies we have developed in Italy and the rest of the world. The Eni of the future will have an upstream component, based mainly on gas, whose operations will be completely decarbonised by 2030, and it will see a complete transformation of the refining and chemical sectors.

We have more than 10 million customers, but we are more than a multi-utility: we are an industrial company that conducts scientific research and develops new technologies. A company that changes its skin but is still based on its strong values and skills. We are transforming ourselves without forgetting our investors and growth, which remains an essential factor. As announced to the market, the results achieved so far allow us to increase our dividend back to pre-COVID levels at €0.86 per share, with 50% paid next September. We will also start a €400 million share buy-back program over the next 6 months."

At the end of July, Claudio Descalzi visited Kazakhstan, the country that plays a key role in Eni's portfolio. Eni has been operating in country since 1992, evidencing its longstanding and solid relationship with the state since its inception. During this visit, Eni's CEO met with Kazakhstan's President, Kassym-Jomart Tokayev, and Prime Minister, Askar Mamin.



Eni and KazMunayGas signed cooperation agreements for the development of renewable, hydrogen and biofeedstock projects in Kazakhstan, strengthening and widening their historic partnership to the energy transition scope.

Through these agreements, Eni marks a further tangible step in line with the company's commitment towards a just energy transition and decarbonization, while contributing to the Country's carbon neutrality targets. In Kazakhstan, Eni, through its local renewable subsidiary *ArmWind*, is a key player in the development of the renewable energy sector through two wind farms and one photovoltaic plant for a total capacity of approximately 150MW.

Eni launched its first renewables project in Kazakhstan in 2020 through the 48 MW *Badamsha Wind Farm*, located in the Aktobe Region, with an annual power generation of about 195 GWh and overall CO2 saving of 172,000 tons per year. The company is now executing the second phase of the project, with 48 MW of additional capacity. In March 2021, Eni has also inaugurated the construction works of a 50 MW photovoltaic plant in the south of Kazakhstan.

Claudio Descalzi said: *"The agreements signed today enhance the perimeter of our historic collaboration with Kazakhstan, further directing it towards a low carbon emission future. Besides the wind and solar activities, Eni will leverage all its proprietary technologies developed over the last few years and focused on energy transition. I thank the President of Kazakhstan, the Government, and State companies for their continuous collaboration towards reaching the Country's and Eni's decarbonization targets".*







NCOC
NORTH CASPIAN OPERATING COMPANY

Karachaganak

Caspian Pipeline Consortium

TIME FOR LONG-TERM INVESTMENTS

SHELL AND KAZAKHSTAN: LONG TERM COOPERATION BASED ON TRUST AND LEADERSHIP

Interview with German Burmeister, newly appointed Senior Vice-President and Country Chair of Shell Kazakhstan

German Burmeister
Senior Vice-President and Country Chair
Shell Kazakhstan

I am happy and excited to start this new chapter of my career in Kazakhstan. In my previous roles, I have always heard a lot of great things about Kazakhstan from many of my colleagues, and I am extremely happy for this opportunity to come here to live and work. For the past three decades, Kazakhstan has achieved tremendous results in social and economic development. Today, Kazakhstan is recognized by the global community as a regional leader, proving the effectiveness of its strong economic model with a stable political system. I would like to congratulate the country and its people on their upcoming 30th Anniversary of Independence.

I am Argentinian and have close to 30 years of experience in the oil and gas Industry, the last 20 years with Royal Dutch Shell. During my career I have had to the opportunity to work in many countries, in many different regions - South America, West Africa, and Europe in a wide range of roles. Working in different environments and learning from each one of them has been an invaluable experience for which I am very grateful. Prior to Kazakhstan, I led Shell's Deepwater business, the second largest oil and gas producer in Brazil. Leading Shell's businesses in Kazakhstan is a privilege.

Shell has a strong presence in the country, one that we need to maintain and grow while always ensuring safe, reliable and competitive operations, and pursuing affordable and competitive projects with minimum impact to the environment. These have always been and always will constitute our #1 priority.

As a long-term investor in Kazakhstan, we are committed to maintain and expand our mutually beneficial partnership and cooperation, looking forward to continued support from Kazakhstan on current and growth projects. It goes without saying that the development of local talent and capabilities will also be our focus in the years ahead. I trust I can make a difference with my experience. We intend to continue developing national staff, both in Shell Kazakhstan and in joint ventures with Shell's participation, an essential factor to delivery of our growth agenda

Kazakhstan remains a 'heartland' for Shell and my goal is to further develop fruitful cooperation with the country to improve competitiveness for global capital of oil and gas projects in Kazakhstan for the benefit of its people and the many stakeholders who rely on our industry.

Increasing Kazakhstan's Investment Competitiveness

Last year, a group of international oil and gas companies, with the support from EY joined efforts with the Government under auspices of the *Foreign Investors' Council (FIC)* to increase the competitiveness of our industry. This led to an incentives package that would distinguish Kazakhstan amongst other peer oil and gas nations, making the country globally competitive in attracting new investment during the current challenge of global energy transition.

We truly appreciate President Tokayev's leadership and commitment to immediate action aimed at improving Kazakhstan's investment climate. On behalf of Shell, I would also like to thank the Government and other FIC members for supporting and contributing to this success. This has shown exemplary cooperation in advocacy that has already resulted in an improved investment climate and better conditions for investors. Of course, the Government's position and positive actions have been a key factor making Kazakhstan more competitive in view of the rapid energy transition underway today.

Decarbonization and Climate Change

We support and share Kazakhstan's goals for the transition to a low-carbon economy and commitment to joining the worldwide effort to reduce carbon emissions and tackle climate change recently announced by President Tokayev. Undoubtedly, energy transition is inevitable and is accelerating every day. From a global perspective, Shell recognizes the challenge of climate change and strives not to stay on the sidelines during this critical transition period. In fact it has taken a key role to drive this transition within our sector.

In doing so, Shell has developed its own *Powering Progress Strategy* focused on working with our stakeholders and customers across sectors to accelerate the transition and achieve net-zero emissions by 2050. This will transform our company as the world moves to cleaner energy, powering lives, supporting an inclusive society, and protecting the environment.

We highly value the mutual understanding and cooperation with Kazakhstan developed over Shell's long presence in the country. As a reliable partner, we are ready to provide our expertise and knowledge in energy transition. For example, in early September we signed a Memorandum of Cooperation in the area of *CO2 Capture Utilization and Storage Technology (CCUS)* with KazMunayGas. Under the Memorandum, Shell technical experts will share their international experience in implementing CCUS projects.

Regarding the existing production facilities and assets, NCOC has already adopted and implemented the *Greenhouse Gases Emissions and Energy Efficiency Management Strategy*, which states specific objectives, targets, and deadlines for achieving 15-25% GHG emissions reduction by 2030. We expect that a similar strategy will be developed in KPO by the end of this year.

For the past three years, Shell Kazakhstan has been implementing the *Solar for Schools* project with a primary goal to create a platform for encouraging the youth's interest in sciences, technology, engineering, and mathematics (*STEM*) and raise awareness of the benefits and opportunities of renewable energy. We have successfully commissioned solar stations in schools of Nur-Sultan, Uralsk and Aktau and are currently completing one project in Atyrau. We are also planning to start construction of another solar energy system in one of Turkestan schools next year.

We also welcome President's initiative on increasing the transparency of Kazakhstan's GHG credit trading system and its harmonization with international trading systems to not only reduce volumes of GHG emissions but also encourage economic activity and attract new investment.

Impact of the COVID-19 Pandemic – How Did Shell Respond?

This has been an unprecedented time for all of us. The virus has impacted and changed our ways of life and daily work in ways that we did not imagine, including sadly the loss of relatives, friends and colleagues. Today, we have learnt the hard lesson of importance of our health and wellbeing as well as following precautionary measures including vaccination. One of the first things my wife and I did after our arrival in Kazakhstan was be vaccinated to protect ourselves and the people around us.

The health and safety of our employees has been and remains a top priority for Shell. Both of our assets were impacted by the pandemic, but thanks to timely



measures and a sound approach, we avoided the serious spread of infection at our facilities without any impact on our production performance. Both NCOC and KPO helped local communities with provision of necessary equipment and capabilities during serious breakthrough periods.

Also, last year, Shell Kazakhstan together with other foreign investors purchased and donated modern intensive care equipment and personal protective equipment to the *Nur-Sultan Multidisciplinary Medical Center* to facilitate the treatment of patients suffering from the coronavirus infection.

However, the situation remains uncertain. If more people are vaccinated, the situation may improve quite soon.

Impressions of Kazakhstan

Kazakhstan is a great country with great people. Nur-Sultan is a beautiful modern city and it's so impressive to learn how the city has grown in a just couple of decades. I am also impressed by the professionalism of our talented staff in our joint ventures and in our Nur-Sultan office.

Kazakhstan and in Argentina have many things in common. For instance, we, Argentinians also have strong family ties and like meat. We love horses too, and our history and culture are strongly linked to that animal. Of course, the climate and weather are much different here and many people have already warned me about cold winters in Nur-Sultan.

As I said in the beginning, I am extremely proud and pleased to live and work in Kazakhstan and wish to explore the country even more. I feel privileged to manage such an important part of Shell's conventional oil and gas business here in Kazakhstan. Together with Kazakhstan and our partners we will achieve impressive results and bring value to all our stakeholders.

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KPO REPORTS HALF-YEAR PERFORMANCE RESULTS

On 11 August 2021, Karachaganak Petroleum Operating (KPO) announced its performance results for the first half-year period. Over this period, KPO produced nearly 73 million barrels of oil equivalent of stable and unstable liquid hydrocarbons, export raw gas and sweet fuel gas. In addition, nearly 5 billion cubic meters of raw gas were injected into the reservoir, which accounts for 48.4 per cent out of the total gas produced in the field. As of today, KPO Partners have invested nearly $28 billion into the development of the Karachaganak field.

Despite the COVID-19 pandemic, KPO completed all the planned activities in due time, safely, and at the lowest cost. The first half of 2021 saw the commissioning of the KGDBN facilities and sanctioning achieved for launching the *Karachaganak Expansion Project*.

With respect to nationalization of employment at KPO, for the first half-year period, the ratio percentage-wise of local employees has been as high as 98 percent of the overall engineering and technical personnel and 84 percent of the company's managerial staff.

KPO maintains its highest focus on the environment. KPO has achieved a gas utilisation rate of 99.94 percent for the first half-year of 2021, performing at a world class level. To date, KPO has invested $437 million into environmental activities in total.

KPO is one of the first companies in Kazakhstan to implement the *Local Content Development Program* successfully. For the first half year period, the *Local Content* share in KPO contracts for procurement of goods, works and services exceeded 72 per cent or more than $296 million in monetary terms.

In cooperation with local authorities, KPO has taken all necessary measures to contain the spread of COVID. The company supported the Government's COVID-19 vaccination program by encouraging employees to voluntarily participate in vaccination.

In June 2021, as part of the program to improve emergency medical care in the *Burlin Central District Hospital*, a new admission and diagnostic department was opened with the support of KPO to accommodate intensive care and CT wards. This year KPO also handed over two new sports and recreation centres in *Zhalpaktal Kaztalov* village and in *Podstyopnoye Terekty* village in West Kazakhstan Oblast. To date, KPO investment in the development of social infrastructure in the region has totalled more than $439 million.

KPO General Director Giancarlo Ruiu is proud to announce that *"KPO has tremendous creative potential thanks to well-coordinated teamwork, competence, and unrelenting aspiration to attain new highs. Our priorities will remain the same to the end of 2021: to maintain the highest production and safety performance while maximizing the value for Kazakhstan, stakeholders and communities".*



30
YEARS OF INDEPENDENCE
KAZAKHSTAN



Karachaganak

KARACHAGANAK: partnership and development strategy

Karachaganak oil and gas condensate field, one of the largest in the world, has been operated by KPO, an international consortium comprising Eni, Royal Dutch Shell, Chevron, LUKOIL and "NC KazMunayGas" JSC.

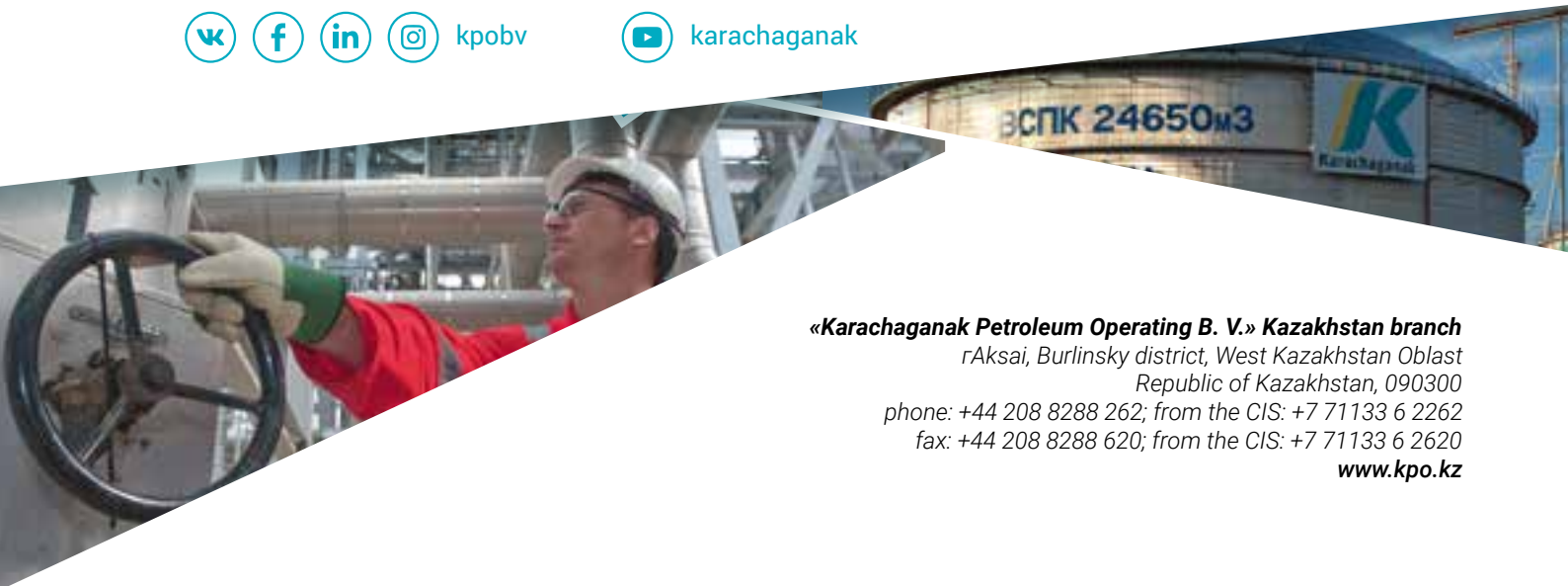
The history of the project is inextricably tied with Kazakhstan's sovereignty.

The 30th Anniversary of Independence is an important milestone on a long journey that the Venture is making together with the Republic of Kazakhstan. KPO's outstanding achievements have been possible due to the favourable investment climate created in the country.

While striving for new production heights, KPO remains committed to its corporate values and creative partnership with the Republic for the benefit of future generations.

kpobv

karachaganak



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OIL AND GAS: THE SUSTAINABILITY IMPERATIVE AND ITS IMPACT ON THE OIL INDUSTRY

by Richard Bregonje
Partner, Tax and Legal Services
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The global trends in the oil industry are the subject of this article. The energy sector is facing a huge transformation amid strong commitments of many countries to be more environmentally-oriented.

To stand a chance of limiting the worst effects of climate change, the world needs to fundamentally change the way it produces and consumes energy, burning less coal, oil and natural gas. The *International Energy Agency's* recent global roadmap to net zero by 2050 shows the world's demand for oil will need to decline from more than 90m barrels a day to less than 25m by 2050. This would result in a 75% plunge in net revenues for oil-producing economies, many of which are dominated by a public sector that relies on oil exports and the revenues they produce.

Growing societal expectation to manage emission is creating pressure on oil and gas companies in 4 key areas:

- *Evolving policies and regulations* (Commitments to the reduction of emissions in accord with the 2015 *Paris Agreement*; Growing application of carbon pricing mechanisms)

- *Public and shareholders activism* (Shareholder pressure and resolutions to provide transparency on emissions and efforts to address climate concerns; Public activism highlighting the negative role of the sector in climate change)

- *Changing investment strategies* (Rise of sustainability indices and tools highlighting sustainability performance; Investment strategies of private equity, investment banks and government institutions to decarbonize investment portfolios)

- *Improvement in renewables energy economics* (Reduction in the *Levelized Cost of Electricity (LCOE)* from renewable sources of power; Growing contribution from solar and wind to future power generation)

So, with a fast-growing demand for the new sustainability imperative for oil and gas industry, energy leaders cannot cling to the business models of the past, they must seize the opportunity and transform. The fact is that the energy industry is experiencing the dual shock of the COVID-19 pandemic and oil market disruption due to a collapse in demand and a surplus of supply. There are, however, other powerful forces at work reshaping the industry, including the shift to renewables and the convergence of the energy and power industries.

Oil and gas companies are being constantly forced to take actions in six main areas:

- *Commitments and targets* (Commitments to long-term sustainability objectives, especially on decarbonization; Continuous improvement targets)

- *Low carbon business models* (Increasing investment in low carbon energy sources and technologies; Establishment of new energy venture organizations)

- *Investment screening and portfolio* (Evaluation of investment opportunities including sensitivities on carbon pricing; Portfolio actions to reduce exposure to assets with high carbon footprints)

- *Investment in technology* (Investment in digital and other technologies to reduce / mitigate emissions; Evaluation and piloting of "adjacent" technologies e.g. carbon capture, hydrogen)

- *Governance and performance management* (Strengthened governance structures to elevate sustainability management to Board level; Improved visibility on sustainability performance and link to executive remuneration)

- *Standards and reporting* (Adoption of industry-wide standards and participation in industry initiatives; Linking of sustainability reporting to established standards e.g. *UN SDG*)

The oil and gas sector is supporting approaches and expansion into low carbon that illustrate different levels of priorities in the sector. Three of them we can clearly identify:

1) *Sustainability and new energy priorities* focused primarily on HSE and CSR aspects related to Oil and Gas activities

2) *Strong focus on Oil and Gas related sustainability action* with selective focus on few new energy areas

3) *Strong commitment in new energy areas* to enable energy transitions in addition of reducing impact from Oil and Gas

The industry is trying to incorparate renewable sources. Solar, wind, tidal, and geothermal energy will comprise more of the global energy mix. As renewables become more viable, the boundary between the energy and power sectors will blur. Traditional utilities will build and operate “refueling” infrastructure, either battery-charging or hydrogen-distribution stations. Consumers will expect an integrated energy experience, with interchangeable sources used seamlessly to power their homes, vehicles, and workplaces.

By making energy use more efficient across industries, transport and the building sector, oil producing countries could put the brakes on the runaway demand for energy growth they are currently experiencing. Increasing energy efficiency would have other benefits too: it would mean countries wouldn’t need to spend as much on increasing their overall level of electricity supply and would allow them to create new jobs in areas such as the construction and maintenance of energy efficient buildings. In any event, the decarbonisation strategies of different countries will be shaped by their individual circumstances.

As we already mentioned, environmental sustainability is experiencing a decisive influence on the energy industry, forcing the oil companies to find a balance between sustainability and profitability objectives.

In conclusion, some fundamental sustainability considerations related to the future of the oil industry:

- *Sustainability* has emerged as a topic of critical importance for Oil and Gas companies

- As important as *sustainability* is for stakeholders, companies also need to remain profitable and attractive for investors

- Successful *sustainability* strategies require a conscious choice on the sustainability positioning that best reflects key stakeholder expectations, and delivers an optimum sustainability impact for any given investment

This impact may be expressed in monetary terms or in broader terms around importance for continuity of the business.

ESG services

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FRONTIER POWER TECHNOLOGIES ADVANCING THE ENERGY TRANSITION FOR KAZAKHSTAN

Kazakhstan's impressive economic development has been spearheaded by the performance of its energy and extraction sectors. Today these industries are responsible for 80% of the country's emissions, and therefore hold significant decarbonization potential. Kazakhstan's emissions have more than doubled since 2000, with the *Global Carbon Project* ranking the country 11th in the world for fossil fuel emissions per capita in 2019. Following GDP contraction during the pandemic year of 2020, the ship has now been settled and Kazakhstan has charted a new course – for post-pandemic recovery based on reduced environmental impact and increased economic resilience.

Kazakhstan is committed to solving the energy trilemma of delivering affordable, reliable and sustainable energy. In his recent *State of the Nation Address*, President Tokayev noted Kazakhstan will face a power shortage by 2030. This is due to rising demand and ageing power infrastructure, which has been operating for an average of 40 years.

Speaking at the *Climate Ambition Summit 2020* the President also underlined the country's commitment to taking bold, targeted action under the Paris Agreement and achieve carbon neutrality by 2060, backed up by a long-term development strategy. Decarbonization of the power and heating sectors are critical building blocks for reducing the carbon intensity and ensuring the resiliency of Kazakhstan's economy.



Loading the bases

As the sun sets on the era of coal-based power, Kazakhstan must build gains in energy efficiency and generating capacity. Dependable and low-carbon gas power provides flexible and highly efficient baseload generation and is a critical pillar in the transformation to a carbon-free future.

Kazakhstan's new gas pipeline infrastructure now makes it possible to bridge the gap and make gas power achievable at the point of demand. We welcome the recent decision to support coal-to-gas switching and advance the gas power agenda in South Kazakhstan – with build out of 2GW in new gas generating capacity planned. This will help tackle pressing environmental challenges and significantly improve the efficiency of the power system in Almaty region.

GE has a range of solutions to help meet Kazakhstan's baseload power needs, with by the world's largest installed base of >7000 gas turbines and >200 nuclear steam turbines generating more than a terawatt of baseload power for the planet.

GE record-setting gas power technologies include the most efficient gas turbine on the market. Our fastest-growing H-class turbine fleet, ordered by 50 power producers to generate more than 26 GW of power at combined-cycle plants in 20 countries, reached 1 million operating hours this year. Power producers choose GE H-Class turbines due to their unrivalled efficiency and decarbonization pathways. This includes pre-combustion carbon abatement through hydrogen compatibility, as well as post-combustion carbon capture systems (CCUS) that can reduce emission by up to 90%. As a result, GE's H-Class technology has secured numerous industry awards, including *2021 Plant of the Yea*r, and the *Reinvention Award*.

Through a recent upgrade package that achieves efficiency at H-Class levels, our F-class turbines provide over 60% combined cycle efficiency and up to 25 MW increased plant output, with fuel savings of as much as $4 million per unit every year, as well as up to two-years' extension to maintenance intervals and carbon reduction of up to 5%. They also provide fuel-flexibility and optimal spinning reserve for balancing and peaking applications vital to accelerating the energy transition. A GE 9F.05 gas turbine will power Australia's first natural gas and hydrogen power station, *Tallawarra B*, which is set to replace an outgoing coal plant and supply baseload alongside peaking capability to pave the way for additional renewables capacities.

The building blocks

In the next decade, hydrogen energy will take center stage in the sustainable development of the global economy, with a *Hydrogen Council* study estimating hydrogen could account for up to 18% of final energy consumption by 2050. Today utility level hydrogen energy projects are already underway. Planned for

launch this year, *Long Ridge Energy Terminal* in the US aims to transition its combined-cycle power plant built around a GE 7HA.02 combustion turbine from a hydrogen blend to 100% green hydrogen within the decade.

In his recent *State of the Nation Address*, President Tokayev stated that hydrogen is a promising area for Kazakhstan. As a major energy producer, Kazakhstan is exploring deployment of technologies to produce, use and export hydrogen fuel. As the manufacturer with the most experience using alternative low heating value fuels, GE is well-positioned to partner with Kazakhstan in building its pathway to hydrogen.

Nuclear power is another longer-term source of zero-emission baseload power Kazakhstan is currently exploring, a promising step given Kazakhstan is the largest producer of uranium and holds the greatest reserves. GE is eager to help Kazakhstan develop safe and carbon-free nuclear power, based on experience stretching back to 1955 and an installed base of >200 nuclear steam turbines equipping 50% of the world's steam powered nuclear plants.

The GE fleet generates 200 GW of carbon free power and includes the largest steam turbine ever built – *the Arabelle*. GE innovates in the nuclear space with partner Hitachi in *Small Modular Reactor* technology. The 10th evolution of our advanced boiling water reactor, the *BWRX-300* is the pinnacle of simple and safe reactor design, supplying flexible and dependable baseload generation at an estimated lifecycle cost equal to a typical combined-cycle gas power plant.

Naturally more efficient

Alongside the phase-out of coal-fired plants in favor of natural gas, hydrogen and nuclear baseload generation, Kazakhstan is targeting diversification of energy sources through significant build out of renewables capacities. During a meeting on power sector development this year, President Tokayev set a new goal of reaching a 15% share of renewables by 2030. Achieving this target would open a pathway to enabling the Republic to produce green hydrogen using carbon-free power – and will be a critical step to delivering deep decarbonization and delivering carbon neutrality by 2060.

Hydropower is well established in Kazakhstan, although many assets require rehabilitation, while wind power still has enormous untapped potential. To date, we are proud to have partnered with Eni to build *Badamsha Wind Farm* in Aktobe region. GE is ready to meaningfully deepen its collaboration with Kazakhstan in renewable energy – as the world's largest manufacturer of advanced wind turbines and hydropower equipment. This includes an installed base of 50,000 wind turbines and 7,500 hydropower units equipped with GE technology, representing more than 400 GW of renewable energy around the globe.

Frontier energy transition technologies will play a vital role. GE offers the world's most advanced wind turbines and are continuously innovating to accelerate development. GE invested $485 million on R&D for renewable energy technologies in 2020 alone, helping us deliver solutions to real-world problems. GE's largest onshore wind turbine, the *Cypress*, now offers revolutionary two-piece wind blades to increase output from hard to-reach sites.

Kazakhstan's ambitious targets call for a ramp-up of renewable energy projects, as well as new balancing capacities vital to ensuring ongoing grid stability. In addition to spinning reserve at gas power plants, GE's offers innovative trailer-based mobile gas-turbine power plants (*GTPP*), for rapid deployment of additional capacity in the event of an incident or to cover energy shortages. Our wind turbines can be fitted with *GE Reservoir* battery storage to offset wind intermittency by creating hybrid renewable energy plants.

GE also partners with customers to modernize the physical and digital grid. This includes GE's new state-of-the-art high voltage direct current (HVDC) transmission system, and our industry-leading *Advanced Distribution Management Solution (ADMS)* that delivers safe, secure grid management and orchestration, enabling utilities to connect more renewable energy resources. GE's game-changing *Green Gas for Grid (g^3)* technology delivers significant emissions reduction by substituting the insulating and switching gas traditionally used in substation equipment – the most potent greenhouse gas in the world.

Shaping the bigger picture

Alongside technology and innovation, public policy and collaboration will be crucial to helping the world decarbonize while meeting growing demand. Over the past decade Kazakhstan had the foresight to strengthen emissions law and policy, including an emissions trading scheme. A carbon tax is under development to catalyze progress and offset the export risk posed by similar initiatives by key trading partners – the EU and Russia. These efforts form an

important foundation for Kazakhstan, with the carbon tax set to generate much-needed investment for carbon abatement and reshaping the national energy system.

As utilities, power producers, grid operators, and policymakers around the world set decarbonization goals for the power sector, GE's diverse offering will help them achieve their targets. During the last decade, the carbon intensity of GE's installed power generation base fell by 19%, outperforming our competitors (12%) through enhanced efficiency of gas power technology and renewables deployment.

This year GE announced a major decarbonization agreement with power producer *Uniper* to help the company achieve its strategic goal of climate-neutrality by 2035. The agreement aims to explore and develop technologies for decarbonization of a >4 GW gas turbine installed base and gas storage facilities across Europe. This provides the opportunity for a holistic decarbonization assessment across GE technologies, including use of hydrogen fuel.

Kazakhstan is already benefiting from collaboration via the *USAID Power Central Asia* regional energy program, which helps develop the roadmap to improving the performance, sustainability, economics, security and resiliency of the energy sector.

GE is eager to establish a major new collaboration with Kazakhstan – to support the development and execution of the roadmap for reshaping the country's energy sector. Our full lens on power technologies can help Kazakhstan meet increasing domestic demand and solidify its leadership position in energy within the region. This will enable the country to unlock further potential through lower-carbon manufacturing and greater regional connectivity to drive electricity exports.

Together, building on decades of successful partnership we can ensure success in the energy transition and meaningfully support Kazakhstan's future.



BASF'S CONTINUOUS AND RELIABLE POWER SUPPLY

by Saule Baitzhaunova
Head of Country Cluster Central Asia
and Managing Director, BASF Central Asia

Myrat Annayev
Country Manager Turkmenistan
and Market Development, BASF Central Asia

Worldwide generation of electricity from renewable resources will quadruple by 2040. In the energy transition age, stationary energy storage units hold a key position among other options for flexible power generation – they help to offset fluctuations in energy production, thereby ensuring a constant supply of electricity.

Electricity plays an enormously important role in our everyday lives. Many devices in our homes only work with electricity and power is essential for trade, commerce, industry, and business. A continuous and reliable power supply – preferably generated in a climate-friendly way from the sun or wind – is therefore vital.

Wind and solar energy generation depends on weather conditions. The resulting fluctuations can be levelled by using stationary storage systems. Moreover, stationary storage ensures that electricity generated from renewable resources is economically feasible and continuously fed into the grid.

This is exactly where the *NAS*® batteries distributed by BASF and manufactured by our Japanese partner NGK Insulators, come into play. These stationary long-term storage devices can store large amounts of surplus electricity generated by solar or wind farms, for example, during periods of strong sunshine or high winds. The *NAS*® batteries can store the electricity for several hours and then release it flexibly as needed over a period of hours. The batteries thus make a significant contribution to the integration of renewable energies into our power grids. And this brings us closer to the energy transition and the achievement of global environmental targets.

The *NAS*® batteries distributed by BASF also have many more applications beyond the integration of renewable energies, ranging from "peak shaving" to decentralized island grids. All this can be achieved with a stationary battery based on a proven technology with an exceptionally long lifetime and manufactured from easily available raw materials. In addition, the overall package of *NAS*® batteries distributed by BASF also offers competitive economic advantages in many applications.

In those regions of the world, where the quality of the grid is not high enough, there is a risk of blackouts. In many cases diesel generators are used as backup system for power generation. Stationary batteries, especially in combination with renewable energies, represent a more economical and environment-friendly alternative.

Private households and companies can use stationary batteries to make themselves - to some extent - independent of energy suppliers and to optimize their energy costs.

NAS® Battery technology has been proven by more than 15 years of deployment at customer sites all around the world. During this time, more than 200 projects have been implemented, with a total output exceeding 580 MW and 4.0 GWh.

The energy team at *BASF New Business* helps you find the right solution. We conduct an initial cost-benefit analysis for your project, deliver the layout of the batteries and provide further advisory support, if needed. Our worldwide presence ensures we can respond to your requests in a timely manner.



THE TRANSFORMATION OF THE ENERGY INDUSTRY

by Maxim Gubashev
General Director Kazakhstan
NES Fircroft

The global energy landscape is changing at an unprecedented rate; no longer is Oil and Gas the only major contributing market with 124 countries across the planet pledging to reach carbon neutrality by 2050.

What does this mean in practise?

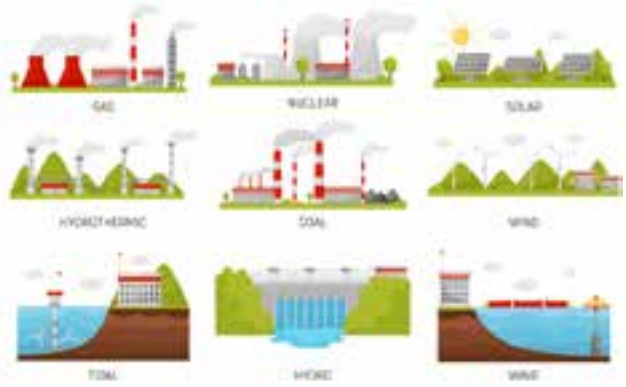
Oil and Gas undoubtedly still has its part to play in sustaining global energy demands. It is this sector which has prevailed as the backbone of the Energy industry, continually demonstrating an outstanding ability to adapt to the peaks and troughs of demands, of complementing the changing energy landscape, and attracting the world's most proficient engineers.

In a recent survey undertaken by NES Fircroft, when asked why they were committed to remaining within the sector, 59% of oil and gas workers stated that they were happy in their current role, and 32% believed the projects were better than others offered by the wider Energy industry.

However, there is a mounting shift in public opinion leading many workers to move their careers into the *Clean Energy* sector; 22% of workers in *Clean Energy* from our survey stated they moved into the sector as it was "more aligned with their values", and 25% of all energy workers surveyed agreed that public opinion was a major driving factor in energy transition as a whole.

Combatting climate change is at the forefront of the global political roadmap. International legislation remains a major catalyst in evolving the energy landscape and driving a collaborative agenda. For example, the *European Green Deal* has set the ambitious goal of becoming the first climate-neutral *continent* by 2050, putting onus and accountability onto all 44 European countries and their operators. This shift is not confined to Europe and talent across the globe is embracing new technological opportunities to reduce the world's carbon footprint.

With international agreements in play, coupled with growing public concerns linked to global warming, oil and gas companies have listened and responded; many powerhouses are looking at ways to complement their assets with renewable energy resources. Operators previously confined to the Upstream vertical are now venturing into Hydrogen, Solar and Offshore Wind amongst other avenues. This is happening in conjunction with an unprecedented number of renewable energy projects being commissioned across the planet.



It is clear that the solution to a more environmentally sustainable future lies in the collaboration of Oil and Gas and Renewable Energy to establish a cohesive and effective energy mix that can meet the world's rising energy demands while protecting the climate.

The Contribution of Oil & Gas Companies

Following on from government-imposed environmental commitments, the operational transition to a more eco-friendly business model started long ago for many oil and gas companies.

Equinor aspires to be a completely net-zero company across its international project portfolio by 2050 and diversified its assets from that of solely oil and gas to incorporate offshore wind several years ago. Equinor took innovation a step further and developed a floating offshore wind farm - *Hywind Tampen* - specifically designed to power their *Snorre* and *Gullfaks* offshore oilfield operations in the Norwegian North Sea, an example of how seemingly paradoxical industries can support one another and help to offset carbon footprints.

Alongside its crude oil business, Shell invests up to $2 bn USD per year in lower-carbon technology including the Wind and Solar industries, as well as electric vehicle charging and Hydrogen. Shell has re-branded their renewable energy assets under *Shell Renewables and Energy Solutions* (formerly *New Energies*) and through their *New Motion* brand, they offer the most charging points for electric vehicles across Europe.

BP has focused on investing in technologies that facilitate low carbon levels and has put sustainability at the heart of the company ethos. Through their internal *Strategy* and *Sustainability* framework they aim to break down the barriers between their global operations and enhance coordination to ensure all aspects of their business are working towards the common goal of a more environmentally sustainable future. Their project portfolio contains Teesside's hydrogen plant, a world-scale facility projected to produce 1GW of blue hydrogen starting as early as 2027.



Market diversification demonstrated by some of the world's largest energy companies has been another major catalyst for the wider industry shift and has paved the way for start-up companies in particular to capitalise on the *Clean Energy* markets.

A Fluid Workforce

Many of the technological foundations of the Renewable Energy industry were first utilised within the Oil and Gas sector. For example, through omitting the need to disturb the seabed, floating offshore installations are widely considered to be less harmful to the immediate environment. Before, this technology was confined to the LNG and Upstream Oil markets, whereas now floating offshore wind turbines are set to become a mainstay of the energy industry as the technology permits access to deeper waters and areas with stronger winds.



It is not just technologies which can benefit several sectors; our 2021 research found that 62% of those surveyed within *Clean Energy* stated they had moved from another sector, citing more opportunities and the future potential of the sector as their reasoning behind the move. To complement this trend, we found that 67% of oil and gas workers are considering a sector move. The dominant factor driving technical talent to leave the traditional Energy market again appears to be the opportunities available and future potential of *Clean Energy*.

Transferable skillsets are particularly evident between those of the *Offshore Oil and Gas and Offshore Wind* industry, with Engineering and Design, Construction and Commissioning, Operations and Maintenance, Decommissioning and Repowering all recognised as key transfer areas. However, in the wake of the pandemic the energy skills gap is still a pressing issue. Despite the skills cross-over, of those surveyed, 71% stated that they required further training in order to adequately transition their skills to their new *Clean Energy* role.

In the same survey, the skills gap was also cited as one of the major significant factors in holding back energy change. It is clear that employers must offer training to their workforces in order to truly mitigate the skills gap and ensure their operations thrive.

The Energy Mix in the CIS Region

Although the CIS region as a whole remains dominated by the Oil and Gas sector, diversification into *Clean Energy* is evidenced in concentrated areas.

Ukraine is dominating the Renewable Energy market with 2 major wind projects located in the south of the country. The *Zophia Wind Farm*, once completed, will be one of the largest wind farms on the Asian continent, providing sustainable electricity to more than 343,000 households. Currently in the final stages of development, Phase I is expected to be commissioned in the first half of 2022. Even larger

is the the *Syvash Windfarm* which, once connected to the grid, will have capacity to produce over 850,000MW of energy each year.

NES Fircroft in Kazakhstan supported the construction of the country's first wind farm in 2018 - *Badamsha 1*- which will generate 48 MW once operational. Situated in the north-western region of Aktobe, the installation represents the nation's first large-scale investment in wind technology, and will produce 198 GWh annually for 25 years. The project stems from an agreement between General Electric (GE) and the Kazakhstan Ministry of Energy. This pivotal wind farm will be joined by a second, *Badamsha 2*, and will significantly increase the quantity of Kazakhstan's energy sourced from wind.

Other major CIS projects span a plethora of clean energy technologies including the *Kola NPP* and *Novatek* hydrogen projects and the *Nizhne-Angarskaya* hydropower plant in Russia, the *Abersheron & Kizi* onshore wind facility in Azerbaijan, the *Svevind* green hydrogen project in Kazakhstan and solar *PV Sherabad I* project in Uzbekistan.

However, Oil and Gas remains a stronghold in the region. The recent Memorandum of Understanding between the Ministry of Energy of Azerbaijan and Ministry of Energy of Ukraine will generate a large volume of job openings in the Oil and Gas sector. Ukraine has committed to investing in Azerbaijani energy companies, enabling oil and gas products to be supplied to European markets through Ukraine, creating positive energy cooperation and opportunities for all.

The Future of the Energy Industry

Our survey results show that many candidates feel positive about the energy transition and the exciting projects it offers. As the Energy industry adapts, it is clear that technology will play a vital role to continue reducing costs and driving change. However, true success lies in people working together from across the energy spectrum to make net-zero a reality. Traditional oil and gas companies will be instrumental in this movement and must prioritise skills training to bridge the gap and provide engineers with confidence as they alter their career trajectories.



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BORUSAN CAT EXTENDS ITS RENEWABLE ENERGY SERVICES WITH SOLAR SYSTEMS

by Zafer Aksakal
EPC Leader
Borusan Group

Borusan Cat has accumulated significant engineering and application experience in cogeneration, trigeneration, biogas, and landfill gas projects over 25 years. The company is currently expanding its solutions with turnkey solar projects in Kazakhstan, Azerbaijan, Georgia, Kyrgyzstan, the Far East of Russia, and Turkey with a motto of creating solutions for a better world.

While offering hybrid alternatives to its existing business partners, Borusan Cat provides engineering and application proposals for PV panels, inverters, and energy solution systems with Cat quality to its potential customers. Additionally, Borusan Cat offers solutions to meet customer needs for those who come up with different brand demands.



An Environment-Friendly Opportunity for Investment

The interest in solar systems is rising parallel to the ever-growing need for renewable energy around the world. Besides being an environment-friendly approach, solar systems are advantageous because the initial investment cost is further reduced year by year with the advancing technology. Also, evolving energy storage systems matched with low maintenance and spare parts costs make the amortization periods shorter. Nowadays, solar systems can be used in high-power land applications and low-power rooftop and land applications. It is anticipated that these applications will increasingly continue in the future.

Hybrid and Microgrid Opportunities with Solar Systems

On a global scale, government incentives are granted to existing power plants for increasing capacity and efficiency with renewable energy sources. Regardless of the availability of such incentives, solar system services offered by Borusan Cat are a significant investment opportunity for energy producers who want to use their entire license capacity.

Hybrid systems offer an opportunity to produce energy by different energy production sources in the same system. Thanks to such diversity in sources, sustainability of energy and cost optimization is ensured. Hardware and software capabilities are also available to coordinate these sources most efficiently.

On the other hand, Microgrid systems provide energy production, usage, and storage by building up a cost-effective network in areas with insufficient energy or no network available. In this context, in addition to conventional Cat generator sets and Cat solar system components, Borusan Cat offers the Cat MMC, the main system controller, along with energy storage systems. With the help of MMC, generators within the microgrid system and the energy generated from solar systems can be controlled and reported through a single screen. Also, Cat energy storage systems make it possible to store the excess energy to be transported or used, if needed.

Producing energy at the place of consumption is a continuously increasing and crucial trend in the world to reduce lost energy and avoid the limitations of energy infrastructure. Soon, as microgrid systems continue to improve, this trend will turn into a structure that can apply to any circumstances instead of being preferred in places where no grid is available.

Borusan Cat continues its efforts to make solutions preferable in the future as well. In this sense, The company aims to deliver better services to its business partners with optimized cost and efficiency through constantly improving hardware and software components used in its systems.



Borusan Cat Reduces Its Carbon Footprint to Zero

The company is committed to exceeding its customers' expectations with the solutions offered. While doing this, Borusan Cat strives to stand out as the company that performs the first applications in the sector.

Having started its solar transformation primarily in its facilities, Borusan Cat is installing a rooftop solar system at its *Adana* plant, to be completed in the last quarter of 2021 as planned. Each 1MWp solar system eliminates 530 tons of CO2 emissions annually. In line with this objective, solar feasibility studies for other Borusan Cat facilities continue at full steam.

Transformation and Future of the Energy Industry: Hydrogen Economy

As the world seeks a way to stop global warming, green hydrogen is increasingly coming into prominence. Hydrogen, which is very costly to produce with the current practices, is supported by renewable energy systems in terms of efficiency. Solar systems can make hydrogen production more feasible each day by reducing costs. In parallel to these developments, Borusan Cat continues its efforts to use hydrogen energy in its existing energy systems.

Caterpillar conducts research and development activities to develop products currently suitable for a mixture of hydrogen and natural gas to a level where they are used solely with hydrogen. Furthermore, Borusan Cat keeps a close track of technological developments for hydrogen storage.

Although it is necessary to limit energy production from fossil fuels, it is also crucial to meet the ever-growing energy need. Borusan Cat believes that the solution to this energy source transformation will be implementing alternative clean energy sources to its current portfolio with high efficiency to attract investment. In parallel to this approach and its sustainability targets, Borusan Cat will continue to create solutions for a better world by increasing the quality of its products and services.



KAZAKHSTAN - FURTHER ALIGNMENT OF RENEWABLE ENERGY WITH CONVENTIONAL ELECTRICITY

by Joel Benjamin, Partner
Maksim Grekov, Of Counsel
Kinstellar Law Firm

Since the end of 2020, there were material developments in two major laws, the Law No. 165-IV *On Support of Use of Renewable Energy Sources* dated 4 July 2009 (the **RES Law**) and the Law No. 588-II *On Power* dated 9 July 2004 (the **Power Law**) that regulate the renewable energy sector and, *inter alia*, the part of the wider electricity market closely related to the renewables energy sector. The developments, as further articulated by officials from the Ministry of Energy in a number of seminars and interviews earlier this year, are the following.

• Newly Commissioned Cycling Facilities (NCCFs)

The amendments to the *Power Law* (dated 9 November 2020, 7 December 2020, further the **Power Law Amendments**) introduced specific regulation for so-called newly commissioned generating facilities with a cycling regime. Basically, these are gas and/or hydro power stations which can quickly and substantially change generated power in a way allowing to compensate for changes in generated power and/or changes in electrical load in the other parts of the grid.

The Rules *on Inclusion of Customers into the List of Power Stations* issued by the Ministry of Energy on 30 April 2020 and Rules *on Organization and Conducting Auctions on Construction of Newly Commissioned Generating Facilities with Cycling Regime* dated 30 April 2021 in more detail determine the requirements for regulating power capacity which is a capacity range within which the service provider can produce electricity subject to established parameters.

Power Law Amendments provide that in case of a shortage of regulating capacity in a specific zone the Ministry of Energy, the system operator and the centralized purchaser determine the best place for location of an NCCF, proceed with a preliminary feasibility study, coordinate reservation of a land plot and, if required, technical conditions to connect to the main gas pipeline and conduct an auction.

The winner of the auction is entitled to execute a capacity purchase agreement (*CPA*) with the centralized purchaser for a term of 15 years for a price determined at the auction. Accordingly, and similar to the legal regime for other CPAs executed on an individual basis/through a tender (for modernization of existing power stations/commissioning of new power stations), NCCFs are not obligated to sell capacity through centralized trades.

Further, NCCFs should annually enter into a capacity regulating service agreement (see paragraph '*New capacity regulating service*' below) with the system operator.

The President in his recent speech to the Parliament mentioned that the Government and *Samruk-Kazyna* should proceed with a number of important infrastructure projects, including creation of around 1000 MWt of new power generation in the south region. We understand this relates to the official announcement of the Ministry of Energy that three NCCF auctions will be conducted at the end of December, for a 150-250 MWt combined cycle unit in the South zone (*Kyzyl Orda* region), a 250-350 MWt combined cycle unit in the South zone (*Turkestan* region) and a 450-550 MWt gas and(or) hydro unit(s) in the South and North zone. Detailed auction documentation is not yet available and, as mentioned by Ministry of Energy officials, the gas supply infrastructure for newly constructed power stations is yet to be created.



Cycling generation is a 'must' step forward to further development of the renewable energy sector as it allows to mitigate of one the most acute issues with renewable energy – its instability.

• New Capacity Regulating Service

In addition to the existing services on power capacity, balancing, day-to-day operation and dispatching, the *Power Law Amendments* introduced a new service on regulating capacity, specifically designed to give to the system operator, energy producers and wholesale consumers an instrument to cover disbalances between factual electrical load and announced (planned) electrical load. The service is provided by Kazakhstan energy producers and non-Kazakhstan organizations, which are entitled to provide such

service, on the basis of bi-lateral agreements. The service is different from either power capacity service (which is designed to ensure there is generally total capacity on the market and administered through the centralized purchaser, FSC) or balancing service (which is designed, basically, for the same purpose as capacity regulating service but with prices determined at centralized auctions and not yet fully operational).

To provide capacity regulating service, a service provider should prove its regulating power capacity which is the capacity range within which the service provider can produce electricity with given parameters. In case a capacity regulating service is provided to the system operator, that proven regulating power capacity is excluded from total capacity of the energy producer which it should use to produce electricity for sale to any qualified consumer.

There is no example of this service being used in the market. But, by definition, we understand this can be used to cover both short-term disbalances, for example, at night when there is no solar and more long term disbalances resulting from temporary unavailability of conventional energy producers or when there is no wind.

• State Support for Financial Settlement Center, FSC on Renewable Energy Market

The amendments to the RES Law (dated 9 November 2020, 7 December 2020, 2 January 2021 and 1 April 2021, further the **RES Law Amendments**) provide, subject to a number of conditions, for direct state support to the FSC in the event the FSC fails to collect sufficient funds to pay renewable energy facilities for generated electricity. Before the *RES Law Amendments*, the only source of the funds to pay to renewable facilities was money collected from so-called conventional power stations (mostly, coal generators). This is a long-awaited legislative provision substantially strengthening the bankability of PPA investment projects and allowing the renewable energy sector to develop further without putting a disproportional burden on the conventional electricity producers.

The *RES Law Amendments* also provided that money collected from conventional producers as well as state support funds should be credited to a separate account and spent only for payments to renewable energy facilities. That is important for physical separation of the funds from various sources as the FSC, in its capacity as the centralized purchaser and in addition to operations of the renewable energy market collects and pays all funds under CPAs.

• Exclusion of RES Costs from Electricity Tariff

Prices for electricity sold by conventional producers are regulated and may not exceed capped tariffs approved by the relevant authorities. The *Power Law Amendments* and *RES Law Amendments* excluded amounts paid by conventional producers to the FSC for payments to renewable energy facilities from the calculation of tariffs for conventional producers and provided for a new term – realisation price.

Realisation price is equal to the tariff plus payments to renewable energy producers (this payment is calculated by the FSC for each conventional producer based on its share of the market) and it is the realisation price that wholesale customers will pay to producers. For the moment, nothing is changed for customers as a result. The new rule makes calculation of the tariff simpler, thus decreasing the administrative burden on conventional producers.



Shifting of payments to renewable energy facilities from the tariff to the realisation price may also be a preliminary step to including payments to renewable energy facilities directly into the bills of retail customers.

There are a number of other notable developments, namely application of the legal regime for renewable energy sources to energy received from waste utilization and so-called 'secondary energy sources' (metal production waste), sale of high-water energy to the FSC rather than via centralized trades and increase of 15 year PPA term up to 20 years for renewable energy facilities auctioned after 1 January 2021.

Summary

In summary, these and the developments discussed above demonstrate substantial state attention to the renewable energy sector and increase opportunities for investment into the sector.

GETTING TO NET ZERO BY 2050

by Rob Fox
Managing Director, Kazakhstan and Uzbekistan
Schlumberger

The oil and gas industry has an important role to play in the global energy transition, and Schlumberger is evolving for that exciting future. Our vision is to define and drive high performance sustainably, sharing the responsibility to act now and to act fast to decarbonize the world's energy system. As the energy transition gathers momentum, we would like to share some of the efforts that Schlumberger is making, to help bring our customers, our suppliers, and ourselves into a greener future.

Last June, Schlumberger announced its commitment to Net Zero emissions by 2050 together with its decarbonization plan that leverages technology to address operational emissions, customer emissions, and carbon-negative actions.

Guided by climate science, the company has spent 18 months conducting extensive analysis and has worked with experts to produce this decarbonization plan that uses 2019 as a baseline year and sets an emission reduction roadmap to reach Net Zero by 2050. The plan is focused on three key areas: decarbonize our own emissions; decarbonize our customer's operations; and carbon-negative actions as well as investment in new technology ventures.

In order to reach Net Zero emissions by 2050, we have set ourselves interim targets. This means we have to reduce our Scope 1 and 2 greenhouse gas emissions by roughly 50% by 2030 to ensure we are on the correct trajectory. Along this journey to Net Zero, Schlumberger will ensure transparency in alignment with the *Task Force on Climate-related Financial Disclosures (TCFD)* and *Sustainability Accounting Boards (SASB)* frameworks. It is important to note that 75% of Schlumberger's baseline GHG footprint comes from the technologies our customers use. To address this, the company has introduced its *Transition Technologies* portfolio, which is designed to help customers reduce their Scope 1 and 2 emissions, while simultaneously enabling us to meet our Scope 3 emissions target.

The *Transition Technologies* portfolio will address fugitive emissions, flaring reduction, electrification, well construction emissions, and full field development solutions. Comprised of proprietary technologies and solutions, these will help to reduce direct and indirect emissions along with other environmental attributes, while simultaneously driving efficiency, reliability, and performance. To quantify the impact of these technologies, Schlumberger has developed a robust framework that enables standardization of measurement, benchmarking through net-footprint comparisons, and ultimately better-informed technology selection during planning.

Decarbonization technologies in action

The implementation of our decarbonization plan in Kazakhstan is already well under way. Our local operational emissions are down by over 20% and by the end of the year our Aktau base will almost entirely be relying on solar energy to provide its electricity needs. We have also helped reduce our Kazakhstan customer emissions, most recently with zero flaring clean-up packages using multiphase pumps. In fact, a major operator in West Kazakhstan used Schlumberger's proprietary *High Gas Volume Factor (HGVF)* pumps during their well clean-up process to reinject produced hydrocarbons into the high-pressure production line instead of the normal practice of flaring. This resulting in a reduction of over 400 tonnes of CO2 emissions in 2019 alone.

Gas and oil flaring from well clean-ups, testing, and other oilfield activities results in CO2 and other greenhouse gases—including unburned methane—which, in total, accounts for an estimated 5% of E&P CO2 emissions. To address these issues, we have a portfolio of *Transition Technologies* and techniques that eliminate the need for flaring or minimize emissions when the activity cannot be avoided.



Drill stem tests (*DSTs*) in exploration and appraisal wells determine far-field reservoir properties, hydrocarbon in place, and deliverability. However, they can be cost prohibitive and have a high environmental impact resulting from flaring and required rig time. Our *Ora* intelligent wireline formation testing platform may offer a viable alternative that eliminates the

need for flaring and enables our customers to meet reserves-booking criteria. In cases where oil flaring cannot be avoided during testing or clean-up activities, we can help achieve optimal combustion efficiency and decrease environmental impact with the industry's only DNV-certified well effluent burner. This '*Evergreen*' burner reduces CO2e emissions per unit volume of oil burned and enables a 70% reduction in unburned hydrocarbon.

Another area of high emissions with the E&P sector of the industry is from the CO2 generated by fuel combustion to power rigs and other related infrastructure.



Although recent offshore electrification projects have shown success on platforms, translating this to mobile rigs presents challenges for units that move on a regular basis and require their own mobile source of power. A clear opportunity to reduce CO2 emissions in this space is to improve operational efficiency. This can be achieved on a component or project basis, resulting in reduced rig time, reduced transportation requirements, and improved fuel efficiency of generating systems that supply power to the rig and other infrastructure.

Emissions associated with drilling projects can also be reduced by using fluid technologies that have less CO2 embedded during their manufacturing process compared with traditional materials. Within our portfolio of *Transition Technologies*, we include drilling-efficiency enablers, cements, stimulation fluids with a low CO2 footprint, and power management systems that aim to maximize rig generator efficiency. Our customers can leverage these technologies to reduce their emissions footprint while maximizing the value of their operations.

While carbon negative actions are still relatively new, we are happy to share one current example that relates to bioenergy with carbon capture and sequestration, or *BECCS*. In March this year, with our partners Chevron and Microsoft, we announced plans to develop the first large-scale *BECCS* plant in the world. This is a unique project, using one of the few carbon-negative technologies available today. When completed, it will remove about 300,000 tons of CO2 from the environment annually. This is one of several ventures we have launched in the Schlumberger *New Energy* portfolio, where we are also pursuing other carbon capture and sequestration (CCS) projects.

Here in Kazakhstan, the Schlumberger team are all fully committed to continue to help the region energy industry reduce its emissions using the latest technologies measured by science-based metrics.

Schlumberger is a technology company that partners with customers to access energy. Our people, representing over 160 nationalities, are providing leading digital solutions and deploying innovative technologies to enable performance and sustainability for the global energy industry. With expertise in more than 120 countries, we collaborate to create technology that unlocks access to energy for the benefit of all.



KAZAKHSTAN'S MISSION IMPOSSIBLE? HOW TO BE A HERO OF NET ZERO

by Anthony Mahon, Partner
Cross Border Tax, Oil and Gas

Olessya Kirilovskaya, Director, Tax and Legal
Deloitte Kazakhstan

Deloitte.



Ahead of November's *United Nations Climate Change Conference Summit in Glasgow* (*COP26*), President Tokayev has laid out both his vision for the country's path toward carbon neutrality as well as making a firm national commitment to the achievement of this goal by 2060.

The country's hydrocarbon resources have, since independence, been a huge contributor to national prosperity and have been one of the primary drivers of Kazakhstan's attractiveness to investors (both domestic and foreign alike). In facing up to the twin imperatives of meeting the nation's climate goals whilst maintaining continued economic robustness, Kazakhstan's oil and gas resources (and the participants in this sector) represent a major component of both the challenges faced by Kazakhstan and the potential solutions available.



However, it is a fundamental fact that, in order to achieve the nation's climate goals, the only chance of success is for this to be a collective effort actively involving business, citizens, government and society. From the reduction of domestic waste and improvement of energy efficiency (and decrease of energy usage) in homes to making existing industries cleaner and developing new carbon-free enterprise, the government has an essential role as a facilitator in providing the conditions in which all of society's participants can play their own full part in driving to a lower-carbon future.

In seeking to achieve this objective, the government needs to take a leading role in providing the appropriate landscape in which the necessary investments and operations can succeed in helping maintain (and even, in time, increase) the economic health of the nation. President Tokayev, in his address to the UN-convened *Global Roundtable on the Extractive Industries*, has explicitly stated that, in order "to *reduce Kazakhstan's energy balance dependency on coal combustion, the National Electricity Development Project will be developed to address the following key priorities: gas, water, and renewable energy development."*

The pivot away from carbon-intensive power generation to a combination of gas, hydro and renewable generation is a fundamental component of the country's low carbon journey. The State also has a major role to play in transforming the country's power transmission infrastructure into one that is more fit for purpose for the future energy mix – most likely meaning a more efficient, digitized and decentralized grid with more localized generation capabilities.

When it comes to the outlined electricity priorities, the participants in the oil and gas industry have central roles to play in both the first and third of those priorities in Kazakhstan. The focus on gas (and, consequently, the need to secure future gas supplies) is inherently linked to the question of how to continue to extract and monetize the country's natural oil and gas resources in a sustainable manner.

With the exception of the Tengizchevroil *Future Growth Project*, there has been a conspicuous absence of new oil and gas investment in Kazakhstan for more than a decade. The international focus on the road to Net Zero means that, in time, demand (and, in due course, likely the market price) for oil and gas will be impacted.

Kazakhstan faces the risk that, the longer time goes on, its precious (unexploited) oil and gas reserves may become stranded resources with no new investment in new exploration and production projects in the country. Within most global oil and gas corporations there is now an multi-faceted competition for investment capital – not just between different potential oil and gas projects (as was once the case) but now between oil and gas and new energy (and energy transition) projects.

It is imperative that the government continues apace with the work it has been undertaking to provide attractive conditions for new oil and gas investments in country. However, more must be done to provide conditions to allow participants to produce at lower costs (and thus maintain future operations at potentially lower market prices) which means both:

- *Incentivizing more investment into local supply chains* and local content development (especially in domains which could have wider cross-industry applications to help drive economic diversification)

- *More actively working with the country's primary industrial sectors* (such as oil and gas) to leverage their global experience in combating corruption and preventing increased project (and operational) costs and value leakage which takes money out of industry and prevents its reinvestment.

In terms of President Tokayev's third priority, *renewable energy*, the oil and gas industry has already shown its commitment to Kazakhstan in terms of investments into wind projects and the introduction of renewable power storage technology into the country.

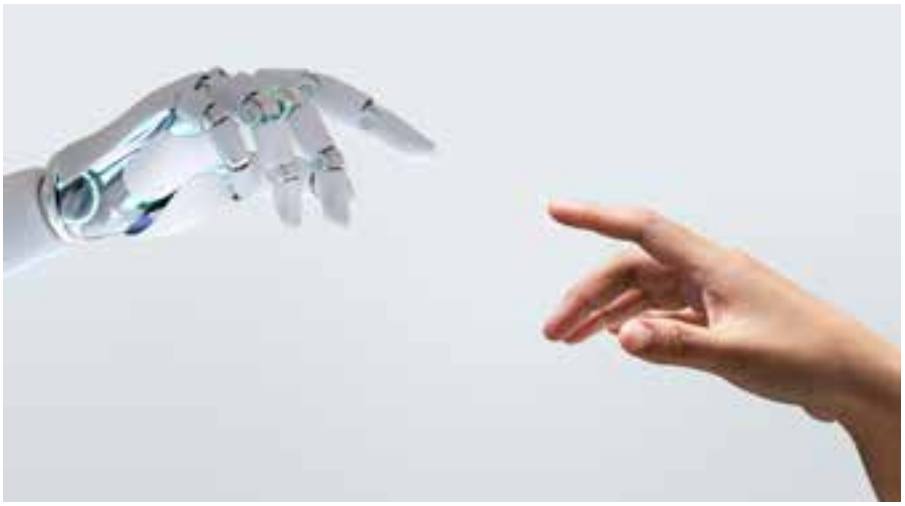
The players in the oil and gas industry (be they exploration and production companies, service companies or advisors) however, have much more to



offer to Kazakhstan in terms of bringing technologies, know-how, and capital to help the country explore the potential for other core components of the journey towards a low-carbon future.

Whether it be carbon capture, usage and storage, exploring the scope for hydrogen production, nature-based solutions (such as President Tokayev's ambitious plan to plant 2 billion new trees) or working to help re-skill or train the population for new low-carbon industries, there is huge scope for the country's existing commercial partners to play key roles on the road to Net Zero.

The scope of the challenge facing Kazakhstan as it seeks to keep its people prosperous as well as meeting its carbon neutrality goals cannot be underestimated. The oil and gas industry is, however, also confronted with a range of existential issues relating to its place in a low-carbon future world. There is clear opportunity for synergy once again between this group of long-term partners and Kazakhstan in working together to secure a low-carbon and prosperous future.



DEMYSTIFYING DIGITAL TRANSFORMATION

by Stuart Harris
Group President, Digital Transformation
Emerson Electric

Digital transformation doesn't have to be complex. The right approach can ensure technology investments deliver the results that matter with confidence, ease and speed.

Digital transformation can have a profound impact on business performance but knowing which technology investments will truly move the needle isn't always easy for companies. In fact, when it comes to implementing digital transformation projects, manufacturers and producers across industries are feeling a lot of uncertainty and anxiety – and it's not entirely unfounded. Consider that less than 30% of digital transformation efforts are succeeding, according to research by McKinsey. What's more, only 16% of respondents said their organisations' digital transformation initiatives have successfully improved performance while equipping them to sustain changes in the long term.



This isn't how digital transformation is supposed to work. Part of the issue is that many companies lack a focused plan for their digital transformation initiatives. Emerson research shows that while 90% of companies recognise the need for a clearly defined roadmap, only 20% have one in place. And without a plan to translate vision into reality, digital transformation efforts can stagnate, if not outright fail.

Research by Gartner indicates that through 2021, digital transformation initiatives, on average, are expected to take large traditional enterprises twice as long and cost twice as much as anticipated. Again, this isn't how digital transformation should be, and we must not accept this as inevitable. Compounding the problem, new *Industrial Internet of Things (IIoT)* solutions seem to hit the market every day with bigger, bolder claims being made by an increasing number of vendors – but with little support for those claims in the form of real customer examples with quantified results. For manufacturers and producers looking to find practical solutions, it's just more noise and more uncertainty.

So how can companies cut through the hype, select the technologies that will tangibly improve operational performance, and deploy them effectively? It's all about adopting the right approach to digital transformation – one that's rooted in practicality and linked to a company's desired business outcomes. This enables a company to confidently implement proven solutions, easily integrate those solutions into its existing infrastructure and quickly get real results and return on investment. Think: confidence, ease and speed.

The case for digital transformation

Before understanding how to move forward with your digital transformation initiatives, it's important to understand why you should move forward. At its most basic level, digital transformation can be defined as applying technology to solve problems – but it's so much more than that. True digital transformation happens when real change is effected within an organisation. It's a change that's sparked by rethinking and optimising processes and by empowering personnel with the knowledge and tools to do their jobs more effectively.

When this happens, a company can achieve measurable performance improvements in areas such as production optimisation, reliability, safety, and sustainability. These areas are critical to operations, and real performance improvement in these areas can help a company maintain its competitive edge and drive long-term health and profitability.



Look no further than the companies excelling in these key performance indicators (KPIs). When compared to their average-achieving peers, Top Quartile performers:

- *Experience two additional weeks of production annually due to better plant reliability*
- *Incur half the maintenance costs*

• *Have three times fewer safety incidents*

• *Use about a third less energy*

In other words, the majority of companies have ample room to improve, and the rewards for doing so can be significant. For example, a typical refinery can experience as much as €50-100 million in collective, bottom-line annual savings by moving from average to Top Quartile performance in these KPIs. Digital transformation represents an incredible opportunity to create those savings and propel operational performance to new levels.



A practical approach to digital transformation

Now that you know what you want from your digital transformation initiatives, you need a plan to make it happen – and that's where adopting a practical approach comes in. There are four basic tenets of this approach that can help you confidently determine what technology investments to make, easily implement targeted solutions, and quickly get results from those solutions.

Start with a goal in mind

Our experience, working with hundreds of companies on their digital transformation journeys, gives us a clear understanding of the keys to success – as well as the common pitfalls. Start by identifying your most pressing operational challenges; those areas that are well recognised as opportunities for improvement and where there will likely be a quick return on investment. By contrast, do not start with a list of *IIoT* technologies to apply, in the hope that your operations teams will find something useful to do with them.

Focus on the many familiar but nagging operational issues that rob operational performance. These issues can be broad, such as too much unplanned downtime, or as specific as pressure relief valve problems. Determine your specific problem areas and then apply proven, scalable and secure *IIoT* solutions that will directly address those issues. Start with known solutions to known problems as a sure way to show results from your digital transformation initiatives. This ensures solutions you implement are directly linked to the outcomes you want to achieve.

Get the most from your data

Before you can take the actions that drive improvement, you need the right data, and you need to make sense of it. Most companies already generate lots of data, but there are usually important gaps as well. Easy-to-install, cost-effective sensors can supplement existing measurement technologies to capture data that will serve as the basis for new insights.

You'll want to apply the appropriate level of operational analytics – intuitive, user-friendly software with embedded domain expertise that can quickly analyse data and provide actionable recommendations. Avoid generic analytics tools and instead deploy solutions that are designed to directly address your challenges. For example, pre-packaged solutions that leverage foundational diagnostics to provide insights into asset health might be what you're needing. More complex operational issues call for comprehensive software platforms that combine collaboration tools with artificial intelligence and machine learning to determine root causes.



Empower your people

For all the talk about technology, digital transformation is ultimately about people. *IIoT* technologies can dramatically change work practices for the better, but if these practices aren't embraced and adopted by your personnel, success is unlikely to happen. The key here is empowering each worker to do their jobs more effectively. This is accomplished with technologies and services that help personnel shift from routine activities like data collection to more value-added activities based on collaboration and business-critical decision-making. Digital transformation empowers personnel across the organization to optimise performance.

Multiply your successes

Applying proven solutions to specific problems can result in immediate benefits, and it's an effective way to start your digital transformation journey, but once you've demonstrated success and seen return on investment for a given project, think bigger. Greater gains come from scaling a proven success across

your facility or across the whole enterprise. For example, you could take a continuous monitoring solution for a set of pumps and easily apply it to all the important pumps that are in a typical refinery.

And for even bigger benefits, you could then replicate your initiative to other sites. For instance, if your digital transformation project is helping you realize a €50,000 annual benefit on a single heat exchanger, you could rapidly turn that into a €50 million annual benefit by applying that same solution to 1000 heat exchangers across your enterprise. This approach allows you to start small and ensure your investments are truly improving your operations – and then rapidly expand your digital transformation efforts in a focused, targeted direction.

The right partner can help

Digital transformation doesn't happen overnight, and there's no solution that will instantly make you a Top Quartile performer. Rather, it's a journey, requiring an ongoing commitment to improving your operations by empowering people to make more effective decisions that will benefit your business. However, that doesn't mean you can't quickly realise results from your digital transformation initiatives. By tying your technology investments to your desired business outcomes and then deploying the solutions that unlock insights and provide actionable information, you can get tangible, meaningful results at each step along your digital transformation journey.

Having the right partner for this journey can mean the difference between success and failure. A trusted industrial automation technology vendor can guide you, helping you select the solutions that meet your specific needs and then implement them in ways that deliver fast, sustainable results so that you get rapid return on investment. A trusted partner can also meet you at any stage of your journey – whether that's helping develop a comprehensive, strategic roadmap that creates a clear vision, or executing a single point solution that brings your vision to life.

Partnering with a vendor who has deep industry knowledge, domain expertise and a proven record of developing innovative technologies, can bring you significant benefits. When choosing the right partner, look for a vendor who can offer a broad, scalable and secure portfolio of technologies, software, services and operational analytics that enable digital transformation. Working together, you can then navigate your digital transformation journey with confidence, ease and speed.

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TECHNOLOGY DRIVES TRANSITION TO SUSTAINABLE DEVELOPMENT IN OIL AND GAS INDUSTRY

by Sergey Leschenko, Country Manager
Gumyrbek Sandibekov, Account Director
Microsoft

The agenda of the 21st century for the oil and gas industry is being moved from fossil fuel-based energy sources to sustainable approaches.

Several of the 17 *Sustainable Development Goals (SDGs)* adopted by the United Nations have a high impact for oil and gas companies, such as #7 *"Affordable and clean energy"* and #13 *"Climate action"*. Every oil and gas company has taken these changes into consideration and begun to integrate them into their operational processes, thus demonstrating their responsibilities to regulatory bodies, the financial community, investors, clients, and civil society.

Another catalyst for the transition to sustainability was a goal from the *2015 Paris Agreement* to keep the global average temperature increase within the range of 1.5-2 degrees Celsius above pre-industrial levels by 2050.



An early-2020 Accenture analysis found that global energy-related CO2 emissions totaled 40 gigatons. Nearly two-thirds of that amount was related to oil and gas —emitted either through the industry's extraction, processing, transportation, and refining activities or, more significantly, at the point of consumption when hydrocarbons were converted for other uses. The imperative for oil and gas companies is to limit not only the 20 percent of emissions that occur in their operations, but also the 80 percent that occur beyond their reach.

Sustainability-focused oil and gas companies contribute to their corporate reputation, as well as their financial well-being. In 2021 the cross-border carbon tax imposed by the European Union will oblige the importing companies to pay for greenhouse gas emissions from their operations in the EU.

Oil and gas companies have many reasons to focus on sustainable development – not only the maintain their image, but also for their financial well-being. In summer 2021, the European Union (EU) plans to announce the parameters of the introduced cross-border carbon tax.

Following the new requirements of the industry, some energy companies have already started to pivot a huge part of their investment to production of renewables and have depreciated or divested some of their oil assets. Large corporations such as Shell, BP, and Chevron, operating in Kazakhstan, have launched ambitious action plans.

These international energy companies have implemented technologies in their operations to generate savings, reduce their carbon footprint, and enable people to achieve more, especially at a time of the global pandemic.

Moving to sustainability-oriented strategies, energy companies use innovative solutions like *Microsoft Azure Hybrid Cloud* data infrastructure, leveraging *Azure IoT*, *Advanced Analytics*, and *AI* to shift to proactive management and enabling a connected remote workplace with Microsoft Teams.

Shell is an outstanding example of this in action, which has begun developing, testing, and rolling out technologies for its digital transformation. Tools like *Microsoft Azure* and *Power Platform* help Shell calculate and understand its environmental impact, capture, visualize, and process reliable data, and offer practical solutions to lower their carbon footprint.



There are energy companies and governments that place increasing expectations on their carbon capture and storage (CCS) and make it a priority. We also see a few great examples when companies and governments collaborate to achieve these goals.

One such partnership is the *Northern Lights Carbon Capture* and *Storage (CCS) Project*, that aims to explore how to capture and transport CO2 from industrial emissions and store it safely without releasing it into the atmosphere. Microsoft joined the project as the technology partner, working with the *Norwegian Government, Equinor, Shell,* and *Total*. The partnership allows Microsoft to integrate its digital expertise as well as to explore ways to advance effective development of the *Northern Lights* project. The work also includes advocacy of policies that help accelerate the contribution CCS can make to meet Europe's climate-neutrality goal.

Technologies push the boundaries of goals that can be achieved in sustainability for every industry. Another instance of this claim is BP company, which transforms towards a cleaner and better-connected future, adopts digital transformation, and applies new technologies to meet carbon negative and net-zero goals. By consolidating and modernizing BP's data and workloads on *Microsoft Azure* and driving digital innovation in its business, BP can operate more efficiently. The solution equips the industry workforce with the skills and technologies to achieve sustainable energy production and delivery: from finance and HR to engineering and analytics. This builds on BP's *Clean Cities* vision to help cities achieve their sustainability goals.

According to Microsoft experts' forecasts, the more new technologies used and implemented by these companies, the more it will help them to thrive in a very different energy paradigm compared with the paradigm it has been using for thirty-forty years.

The world is making progress towards SDGs with encouraging signs that energy is becoming more sustainable and widely available. Renewable energy is making impressive gains in the energy sector. The energy transition is real, it's upon us. With the right technology in place, innovative approach and strategic planning, energy companies can pivot rapidly to meet changing market demands and circumstances and achieve their goals.



MEMBER NEWS



Caroline Savage is Appointed Consul General of the U.S. Consulate in Almaty

A career Foreign Service Officer with the U.S. Department of State since 2004, Caroline Savage assumed the position of U.S. Consul General in Almaty, Kazakhstan, in August 2021.

From 2019 to 2021, Ms. Savage served at Georgetown University's Institute for the Study of Diplomacy, where her focus was diverse diplomatic leadership, a project she began at Georgetown from 2018 to 2019, where she also taught courses on Diplomatic and Military Statecraft and U.S.-Russia Relations to undergraduate and graduate students.

Caroline Savage was Director for Russia and Central Asia on the National Security Council from 2010 to 2011, leading interagency development of national security and foreign policy with Russia and Central Asia. She also served as Political-Military and External Affairs Officer in the Office of Russian Affairs from 2009-2010, where she formulated U.S. policy and diplomatic strategy for the U.S. military and Russia's relations abroad in bilateral and multilateral fora.

Ms. Savage's overseas assignments include service as Public Affairs Officer at the U.S. Embassy in Azerbaijan (2016-2018), Public Affairs Officer at the U.S. Embassy in Mozambique (2012-2015), Public Affairs and Consular Officer at the U.S. Embassy in Belarus (2007-2009), and Political and Consular Officer (2005-2006) at the U.S. Embassy in Luxembourg during the country's European Union Presidency.

Prior to joining the State Department, Caroline Savage managed energy and utility regulatory programs for a USAID contract between counterparts in the United States, Eastern Europe, and the former Soviet Union. She also worked at the Center for Strategic and International Studies, the Woodrow Wilson Center for International Affairs, at CNN's Moscow Bureau.

Caroline Savage graduated from the Georgetown University School of Foreign Service and earned Master's degrees in Russian, East European and Central Asian Studies and Political Science from the University of Wisconsin-Madison. She has received multiple Department of State Superior and Meritorious Awards.

MEMBER NEWS



Donald Townsend is Appointed U.S. Senior Commercial Officer of the U.S. Consulate in Almaty

Donald Townsend is currently the Senior Commercial Officer with the U.S. & Foreign Commercial Service (USFCS), posted in Almaty, Kazakhstan. From 2012 to 2017, he served as the regional Intellectual Property Attaché to Russia and the CIS, posted in the U.S. Embassy Moscow, during which time he covered all the countries of the former Soviet Union, as well as working in Eastern Europe and the Balkans.

Between these two overseas postings, Donald Townsend worked as a patent attorney for the U.S. Army Medical Research and Development Command, as well as a Lead Other Transactions Specialist, with the NIH, where his work was focused on vaccines, telemedicine, and surgical devices. From 2020-2021, He served on the *Operation Warp Speed* vaccine development effort, acting as the lead IP attorney negotiating the *Pfizer, Moderna* and *Janssen* vaccine contracts, and was awarded the *Department of the Army Civilian Service Commendation Medal*.

Prior to government service, Donald Townsend was a practicing patent attorney focused on licensing and negotiations related to software, chemical, pharmaceutical and biotechnical arts, and worked in East Asia, the US and Europe, with his base in Tokyo, Japan. He has a J.D. with a focus in securities law, a B.S. in chemistry, and will graduate shortly with an M.S. in biotechnology management.



Hüseyin Özhan is Appointed Director of EBRD in Kazakhstan

Huseyin Ozhan has been appointed Director of the European Bank for Reconstruction and Development (EBRD) in Kazakhstan. A Turkish national, Mr. Ozhan joined EBRD in January 2011 as a Principal Banker on the Transport team in Istanbul. He went on to become a Senior Banker on the same team before becoming Head of the Ankara Resident Office in 2015 and Deputy Head of EBRD Turkey in 2017. He then became Advisor to the EBRD Vice-President, Banking in 2019.

Prior to joining EBRD, Mr. Ozhan worked as Sector Head for the Corporate Banking and Structured Finance department at Eurobank Tekfen. As part of a private investment firm, he was previously involved in a number of infrastructure transactions including energy and telecoms in the CIS and the Balkans.

Huseyin Ozhan holds a B.A. with honours in Economics and Mathematics from Macalester College, Minnesota, an M.A. in Finance, and is a Ph.D. candidate at Yeditepe University, Istanbul.



Shell Appoints German Burmeister
Senior Vice President & Country Chair
Shell Kazakshtan

German Burmeister has over 30 years of experience in the Oil and Gas Industry, the last twenty years with Royal Dutch Shell (RDS). Prior to joining Shell in 2001, he worked in various positions in Pluspetrol and ExxonMobil in Argentina, Bolivia and Peru in diverse areas of the Oil and Gas Industry including new business and gas markets development, LNG trading, governance of non-operated assets, power, upstream commercial and operations.

Before his assignment in Brazil, German Burmeister served as Vice President of Strategy and Competitive Intelligence Group for RDS where he developed the company's business strategy in different areas across the energy value chain in close interaction and collaboration with the RDS Executive Committee and Board of Directors.

Following the RDS merger with BG in 2016, German Burmeister led the Deepwater business in Brazil, the second largest Oil and Gas producer in the country. As Vice President for Brazil, he was accountable for approximately $30 billion of capital and held responsibility for developing new business opportunities and maturing projects in the pipeline with a value of multibillion dollars of capital investments.

German Burmeister holds a Petroleum Engineering degree from Instituto Tecnologico de Buenos Aires (1994) and an MBA from Instituto de Altos Estudios Empresariales (1997) in Buenos Aires. He is an Argentinian national.



Olivier Lazare is Appointed
Managing Director
North Caspian Operating Company (NCOC)

Olivier Lazare joined Shell in 1985 in The Netherlands as a Junior Petroleum Engineer, working both onshore and offshore in the United Kingdom, Gabon, Brunei, and Oman. In 2003—2006 he led several New Business Development projects for Shell in the Far East, particularly in Australia, where he helped establish a new heartland for Shell's LNG business.

In 2006 –2012 Olivier Lazare served as Vice President of New Ventures New Business (formerly EPB New Business Development) for the Upstream Americas region of Shell's Exploration and Production based in Houston. Between 2013-2017 he was the Shell Country Chair in Russia.

Between September 2017 - June 2021 Olivier Lazare served as Country Chair of Shell Kazakhstan. In Kazakhstan, he took on the role of Deputy Chairman of the *Kazakhstan Foreign Investors' Council Association* and is a member of the *Prime Minister's Council to Improve the Investment Climate*. His contribution was highly appreciated by the Government of Kazakhstan, which presented him with the *Presidential Dostyq Order, 2nd Degree* in recognition of his impact on the oil and gas industry.

Olivier Lazare is a French national and holds a PhD in Nuclear Physics. He speaks Russian.

MEMBER NEWS



Giancarlo Ruiu Appointed General Director of Karachaganak Petroleum Operating (KPO)

In April 2021 Giancarlo Ruiu of Eni was appointed the new General Director of Karachaganak Petroleum Operating (KPO). Giancarlo Ruiu has twenty years of widespread experience in oil & gas field management, both in Kazakhstan and internationally, where he held managerial roles covering the full cycle of exploration, development & operation and business development. In his most recent assignment he held the position of Head of Surface Program in ADNOC /UDR, the Eni JV in Abu Dhabi.

He previously held the roles of Managing Director in Eni Ghana and Development Phase 1 Director in the North Caspian Operating Company (NCOC). Over the course of his professional career within the energy industry, Giancarlo Ruiu has acquired robust leadership skills and sound experience working in complex ventures and building strong relationships with local stakeholders. His valuable experience and good understanding of Karachaganak's business performance will greatly contribute to KPO's overall efficiency.



Citibank Kazakhstan Appoints Saule Zhakayeva Chairman of the Management Board

Citibank Kazakhstan announces the appointment of Saule Zhakayeva as Chairman of the Management Board. In this role, she succeeds Andrey Kurilin, who currently holds another position in Citigroup.

Saule Zhakayeva has more than 25 years of experience in the financial services industry and joined Citi Kazakhstan's team in 2001, where she was responsible for all banking products operations including cash, trade, securities and funds services as well as for Citi's coverage business in Kazakhstan, including corporate banking and work with multinational companies. She has served as Deputy Chairman of the Citibank Board since 2004.

Saule Zhakayeva graduated from the Kazakh Management Academy majoring in Finance and Credit, and holds a Master's degree from HEC Paris business school and the International Business Academy in Almaty.



MEMBER NEWS



Ekaterina Lukyanova Appointed General Manager of PepsiCo Central Asia

Ekaterina Lukyanova brings seventeen years of professional experience at international companies to her various leadership roles at PepsiCo. Before joining PepsiCo in 2014 she worked as Marketing Director in Lactalis Russia, managing the total portfolio of brands and categories.

At PepsiCo, Ekaterina Lukyanova gained multi-market and x-functional management experience leading the regional commercialisation function for eleven markets in all four categories. In her new role as General Manager for PepsiCo Central Asia, she will lead the Snacks, Beverages, Juices & Dairy business in the Kazakhstan, Kyrgyzstan, and Uzbekistan markets.

Ekaterina Lukyanova graduated from the Moscow State University Economics and Business Management Faculty specializing in Food Production. She continued her education with business programs at the Stockholm School of Economics and Harvard Business School.



Visa Appoints Cristina Doros Vice-President and Country Manager Central Asia and Azerbaijan

Cristina Doros is Vice-President and Country Manager for Central Asia and Azerbaijan based in Almaty. Leveraging her 20+ years of experience in retail banking, information technology, cards and mobile payments, she joined Visa in 2016 to lead the regional Core Products team.

Since 2019 she has been Acting Vice-President, Head of Solutions, Visa CISSEE and Country Manager for the Caucasus. Prior to her current role with Visa, she was Deputy CEO and Board Member of a leading Moldovan bank.

Cristina Doros is one of the CISSEE representatives in the CEMEA Women's Leadership Network and Key Lead of regional diversity initiatives.

She holds a Master's Degree in Economics from the IEDC-Bled School of Business, Slovenia.



OPERATION WARP SPEED
THE U.S. GOVERNMENT PUBLIC-PRIVATE PARTNERSHIP FOR DEVELOPMENT OF THE COVID-19 VACCINE

by Donald Townsend
U.S. Senior Commercial Officer
U.S. Consulate in Almaty

Healthcare in the U.S., including the provision of medicines and treatments, has traditionally been handled by the private sector. However, the *Department of Health and Human Services (HHS)*, the US equivalent of Kazakhstan's' Ministry of Health, plays an important role in supporting and incentivizing research and development, manufacturing and patient care. Generous funding is provided to HHS each year to achieve this, with a budget of $94.5 billion in discretionary budget authority and $1.3 trillion in mandatory funding for HHS in 2021. Part of this budget goes towards grants to academia, institutions, NGOs and private industry for medical research, as well as support for institutions and sub-agencies working on medical innovations such as the *National Institutes of Health (NIH)* and the *Biomedical Advanced Research and Development Authority (BARDA)*.

BARDA supports the transition of medical countermeasures such as vaccines, drugs, and diagnostics from research through advanced development towards consideration for approval by the *Food and Drug Administration (FDA)* and inclusion into the *Strategic National Stockpile*. This is achieved through ***public-private partnerships***, in which industry shares financial risk with the government, improves efficiency and accelerates development, all while sustaining a marketplace that guarantees continued access to countermeasures vital to the national security of the United States.

In addition to HHS, other US agencies work in partnership with private industry to address pharmaceutical security for the nation. A lesser-known example is the *U.S. Department of Defense*, which funds the research, development, manufacture and supply of vaccines, antiviral drugs, antitoxins, and monoclonal antibodies unavailable on the commercial market and which may not be developed due to lack of commercial incentive. A good example is vaccines for tropical diseases such as Ebola, which are not financially viable to produce without government funding.

In 2010, the *Assistant to the President for Homeland Security and Counterterrorism*, recognizing that the supply of certain medical supplies was not being addressed by private industry in a manner that might be needed in a health emergency, ordered the *Department of Defense (DoD)* to "[e]stablish agile and flexible advanced development and manufacturing capabilities to support the development, licensure, and production of medical countermeasures that address the needs of our military and the nation". In response, the DoD funded construction of the *Advanced Biologics Manufacturing Facility for Private and Public Use*, which was completed in December 2016. This facility is now a center of COVID-19 vaccine development, wherein the government owns the facility, and private companies operate it. Such a structure is routinely used in the U.S. and is known as a "*Go-Co*", i.e., government-owned, company-operated.

On the HHS (civilian) side, the FDA is collaborating with federal partners and with industry to improve manufacturing of the current generation of influenza vaccines and facilitate the next generation of influenza vaccines. BARDA has established three 'Centers', referred to as *Centers for Innovation in Advanced Development and Manufacturing (CIADM's)*, to develop and manufacture medical countermeasures such as vaccines and therapeutics used to protect health in emergencies, and which can transition quickly and cost-effectively between products. Created as ***public-private partnerships***, the HHS CIADM's will provide a significant domestic infrastructure in the United States capable of producing medical countermeasures to protect Americans from the health impacts of bioterrorism as well as pandemic influenza and other disease in response to public health emergencies.

Despite all these efforts, the COVID-19 pandemic presented a unique problem not envisioned by the system, and by February 5, 2021, there were over 26 million cumulative reported cases of COVID-19 in the U.S., and about 449,020 reported deaths, according to the *Centers for Disease Control and Prevention*. Recognizing the urgent need to develop a relevant vaccine and therapeutics, the U.S. government quickly established a partnership among components of the *HHS, CDC, the National Institutes of Health (NIH), BARDA*, and the *DoD*, with initial funding by the U.S. government of $10 billion. On May 15, 2020, the federal government publicly announced *Operation Warp Speed (OWS)*, a partnership between the DoD, HHS and the private sector with a goal of producing 300 million doses of safe and effective COVID-19 vaccines with initial doses available by January 2021.

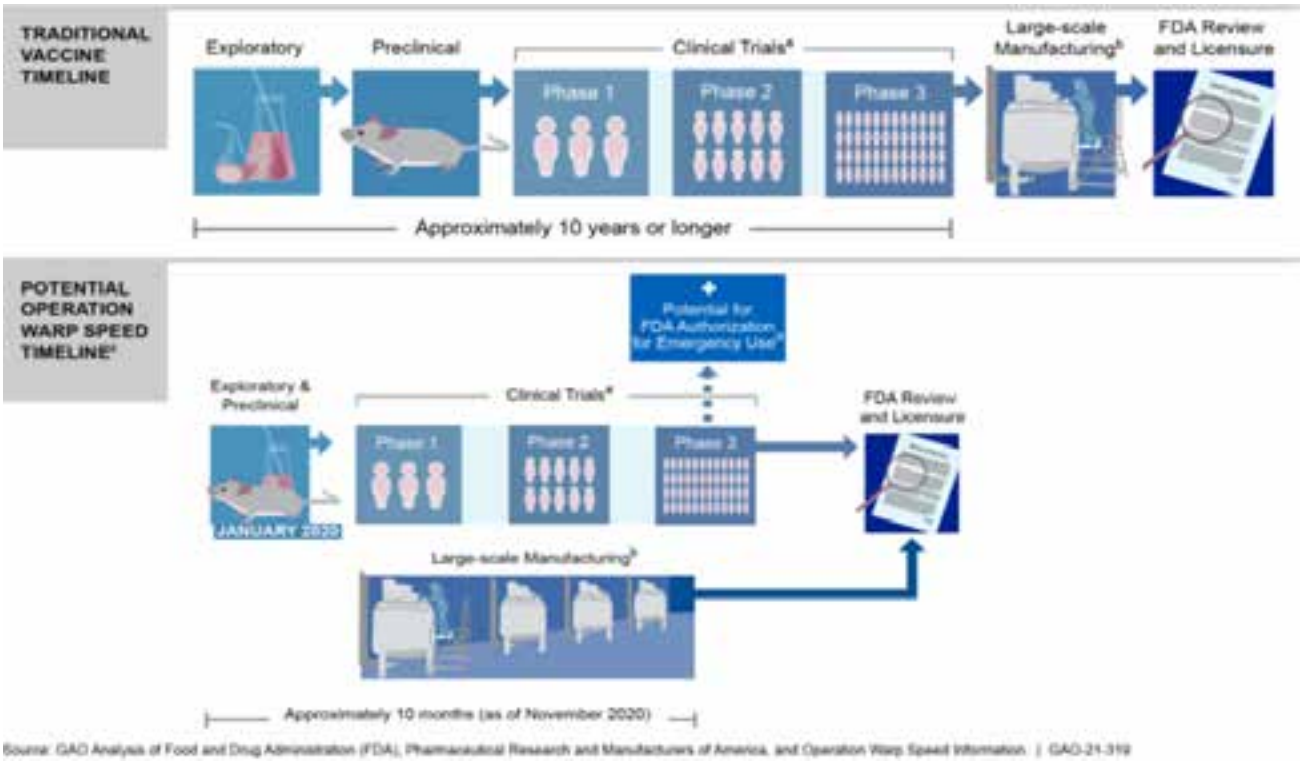
At the outset, OWS staff worked all summer 2020 to negotiate contracts with private sector candidates, and work with candidates to start development of the vaccines and construction of the manufacturing facilities. This led to the issuance of large contracts

to *AstraZeneca, Moderna, Pfizer, Janssen (J&J), Novavax, Regeneron, and GSK/Sanofi*. It was decided that the candidates would share data and techniques when relevant and possible, and would work in parallel, despite leading to possible redundancies. The cost-benefit analysis provided justification for the cost, and it was decided that the likelihood of one successful candidate vaccine being quickly developed was small, so the government would fund many simultaneously to improve the odds. Accordingly, the following contracts were issued:

- **Regeneron**: $446M, mAB Manufacturing; Prototype OT for large scale manufacturing with production options for doses to vaccinate up to 300M people
- **Novavax**: $2.25B, Vaccine Production; Prototype OT for large scale manufacturing (up to 100M doses) with production options for doses to vaccinate up to 300M people)
- **Sanofi/GSK**: $2.2Vaccine Production; Prototype OT for large scale manufacturing (up to 100M doses) with production options for doses to vaccinate up to 300M people.5B to Sanofi, $342M to GSK (adjuvant)
- **Janssen**: $1.1B, vaccine Production; Prototype OT for large scale manufacturing (up to 100M doses) with production options for doses to vaccinate up to 300M people.
- **Pfizer**: $2B, Vaccine Production; Prototype OT for large scale manufacturing (up to 100M doses) with production options for doses to vaccinate up to 300M people). EUA filed 11/20.
- **Moderna**: $2B base, Vaccine Manufacturing; FAR-based production contract for 100M doses / options for up to 300M)). EUA filed 11/30.
- **AstraZeneca**: $1.4B Prototype OT for Ph3 trials and 100 million treatment courses, $400M FAR based production contract up to 200M doses

Further, it was clear that conventional approaches to vaccine development would be insufficient, and rapid development methods would need to be developed and implemented. Through consultations and studies, the accelerated timeline of development for OWS was developed, and is shown below in comparison to traditional vaccine timelines.

To assist the private sector partners, in addition to funding, the U.S. government assisted in manufacturing capacity (through locating additional available manufacturing, and building additional manufacturing at USG expense); and manufacturing supply chain assistance (through expediting procurement and delivery of critical manufacturing equipment; developing a list of critical supplies that are common across the six OWS vaccine candidates; and expediting the delivery of necessary equipment and good). Further, expert DoD personnel were provided to perform needed tasks, and the State Department expedited visa approval for key non-U.S. personnel to allow entry to the U.S. for work on OWS.



Source: GAO Analysis of Food and Drug Administration (FDA), Pharmaceutical Research and Manufacturers of America, and Operation Warp Speed information. | GAO-21-319

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As a result of these efforts, by January 30, 2021, five OWS vaccine candidates entered phase 3 clinical trials, a record-breaking development. Then, in November 2020, *Pfizer/BioNTech's* and *Moderna's* vaccines received emergency use authorization (*EUA*) from the *Food and Drug Administration (FDA)*. Recently, on August 23, 2021, the FDA approved for adult use *Pfizer/BioNTech COVID 19* vaccine (*COMIRNATY*™). OWS proved unequivocally that public-private partnerships in the health space can provide synergistic results unachievable when such parties work separately. Public-Private Partnerships can achieve far more, far quicker, than these sectors working independently.

Importantly, the U.S. government decided to take on the risk of funding the manufacturing infrastructure (i.e., biologics production facilities) to produce these vaccines and therapeutics, so as to give firms confidence that they can invest aggressively in development. Also, for the first time ever, manufacturing capacity for selected candidates was advanced WHILE the candidate was still in development, rather than scaled up after approval or authorization, with the government, rather than private companies, taking the risk to build the manufacturing. It was reasoned that the manufacturing capacity developed could eventually be used for whatever vaccine is eventually successful, if possible given the nature of the successful product, regardless of which firms have developed the capacity.





Further, it was found that traditional drug development processes can be rapidly sped up and also achieve success. This includes utilizing clinical trial data from related platform technologies, accelerated reviews by regulatory authorities, and concurrent development and manufacturing build out. Additionally, it was found that, to mitigate risks of failures in development, the government should consider and fund many alternatives, with varying technology development levels and platforms. Just like in financial investing, spreading the risk is key. In the case of OWS, the payoff was unexpectedly tremendous, with multiple successful vaccines.

Conclusion

The COVID-19 pandemic has caused governments to look at how things have been done in the past, their shortcomings when a health emergency struck, lessons learned, and to start planning and taking action to ensure pharma and biopharma security for their nations in the future. We must all now recognize that better planning from all sectors (private and public) is needed. Working together to determine how best to prepare for health emergencies in the future is crucial.

For some countries this preparation may mean stockpiling, localizing manufacturing of essential medicines at government expense, or entering into agreements with international partners to assure supply. For others, like the U.S., preparation may mean government funding of research, development and manufacturing facilities, and public-private partnerships with industry leaders capable of operating such facilities. Cooperation is key.

ADVOCACY UPDATE
AUGUST – OCTOBER 2021

The *AmCham-Prime Minister's Council to Improve the Investment Climate* resumed on October 8 after the traditional summer break to discuss *COP26: Addressing the Urgency of Climate Change*. Alternative energy has acquired crucial status as the *Glasgow COP26 Climate Change Summit* approaches in November and has dominated the Council Agenda this year. The need for serious enquiry into climate change, given this year's intensive series of global climate disasters – cataclysmic flooding, fires, earthquakes, has made the two-week long COP26 session attended by world leaders, senior government officials, and environmentalists (estimated attendance - 25,000 participants) – a major global event.

The *COP26* goal is to encourage and bind the signatory countries to the Paris Accords to honor their commitments under the Accords and to undertake meaningful energy transition to curtail the negative effects of climate change. This is clearly understood to be a difficult goal, financially costly as well as requiring disciplined action magnitude that will affect all industries engaged in provision of energy and power.

However, energy transition presents many opportunities as well, including new forms of employment in industries that can provide significant numbers of jobs during and after energy transition. The traditional forms of energy will of course remain fully operative into the future, but the transition will lead into a new world of wind, solar, hydrogen, and even nuclear energy – 'clean energy' that will preserve natural resources and restrict the negative effects of climate change.

Kazakhstan's President, Kassym-Jomart Tokayev will attend the *COP26* Summit, a signal that Kazakhstan, a signatory to the Paris Accords, is seeking to engage in solutions to the global dilemma. As a country that owes its affluence to the oil industry, Kazakhstan must act together with the industry leaders that have brought the country its economic leadership. The discussions around future action will be a collaborative dialogue, one that has already begun.

AmCham has designed its Council sessions since early last summer to highlight the challenges and possibilities of energy transition, a dialogue in which the oil industry is fully engaged. The June Council focused on *Alternative Energy – The Path to the Future* and opened with the Council Ambassadors (*U.S., Canada, European Union/ Netherlands*) outlining their own countries' approach to renewable energy . Speakers from the *International Energy Agency (IEA)*, the *Chevron Energy Transition Team*,



and the *U.K.COP26* Ambassador followed. In turn, four prominent AmCham member companies presented their options for a clean energy future.

The October Council picked up from the June perspective to focus on *Addressing the Urgency of Climate Change* – the risks it poses today and a map for the future. The introductory speaker was *AmCham President Kenneth Mack* who combined themes by speaking about decarbonization as a catalyst to attract new foreign investment. As AmCham has stressed for over a decade at the Council, he pointed out that obstacles to foreign investment must be removed and safeguards provided to give foreign companies confidence to invest. To achieve the carbon neutral goals that Kazakhstan has announced, decisive leadership is needed to create the conditions for Kazakhstan's expanded integration into the global economy.

William Tompson, Head of the OECD Eurasia Division, elaborated on Ken's Mack's presentation by stressing that government actions in every sphere will be needed – tax, transport, energy, agriculture, education, and urban planning – to reach the government's goal of net zero GHG emissions by mid-century. This would require public and private finance to cover ground from large-scale infrastructure to small-scale private developments.

Four ambassadors spoke about Climate Change – two were newly-arrived Ambassadors to Kazakhstan (*U.K. Ambassador Kathy Leach and E.U. Ambassador Kestutis Jankauskas*), with the addition of *Netherlands COP26 Ambassador Jaime de Bourbon* and the *Canadian Prime Minister's Special Envoy to the European Union and Europe, Stephane Dion*, a noted public and political figure with strong environmental views.

• *Ambassador Leach* spoke from the perspective of the U.K.'s role in hosting *COP26* in Glasgow. Characterizing climate change as the major threat to global security and prosperity in the 21st century, she stressed that the U.K. would support Kazakhstan in achieving its ambitious goals and welcomed the country's attendance at *COP26*.

• Speaking on behalf of the *European Union, Ambassador Jankauskas* outlined recent E.U. climate change legislation including *European Climate Law* aimed at achieving climate neutrality by 2050 and the *Carbon Border Mechanism* with its commitments to support vulnerable countries meet their decarbonization goals. The E.U. promises to assist Kazakhstan by working with SMEs and BATs, phasing out coal, and discussing nuclear energy safety.

• *Special Envoy Stephane Dion* stressed that both Kazakhstan and Canada need to double, even triple their cooperative efforts in environment, climate change, energy transition and water management. He identified opportunities for joint action between Canada and Kazakhstan.

• *Ambassador de Bourbon* spoke about the commitments made by countries that will participate in *COP26*. Specific goals must be to reduce CO2 emissions yet maintain safe and sustainable access to energy. International cooperation, technology transfer, and energy investments are required to achieve these goals. A more sustainable energy mix is needed.

Four corporate CEOs representing different industries, each crucial in terms of their impact on climate change, outlined how their companies and industries could contribute to the challenges ahead at *COP26*.

• *Bela Ferenczi, GE President for Russia, the CIS and Central Asia*, spoke about the international commitments made to reduce global emissions, but termed them inadequate. GE is a world leader in power and the many forms that energy transition will take in the future. The company designs and produces innovative technology and equipment that will have a major impact on those aspects of climate change that require immediate action. He stressed that greater intensity and targeted actions are needed to achieve the world's goals, especially in the power sector, and that Kazakhstan can display its regional leadership by using new technologies to navigate its energy transition.

• *Ahlem Friga-Noy, TotalEnergies Kazakhstan Country Director*, addressed the oil industry perspective on decarbonization and climate change. The company has been an active supporter of the Paris Agreement from the beginning and has incorporated climate objectives into its core strategy. *TotalEnergies* is committed to becoming carbon neutral by 2050.

It is working closely with the Kazakhstan government to develop the country's *Low Carbon Strategy* and to improve GHG regulating policies to align them with the best international standards. The company is also actively working on renewable projects, has already installed two solar projects in southern Kazakhstan, and is seeking more solar and wind projects.

• *Gerard Fries, General Director of Orano Group Kazakhstan (Areva/ KATKO)*, spoke about Kazakhstan's long-standing *KATKO JV* project, the *Orano* pursuit of decarbonization, in particular in the country's electricity mix. He addressed doubts about nuclear energy safety by stressing nuclear's low-carbon energy in combatting global warming, its preservation of natural resources, its competitive and environmental-friendly characteristics, and its positive impact on employment.

• *Sergey Glokke, Kazakhstan Country Director* for the *Eurasia Group*, an agricultural distributor that has contributed greatly to agronomy training and upgrading agricultural technologies in Kazakhstan, stressed that agriculture's negative impact on the environment and climate change is often neglected, but in fact it represents one of the most serious challenges.

He focused on new technologies that save fuel, reduce gas emissions, and decrease use of fertilizers and chemicals. Agricultural water management and innovative ecological practices also economize natural resources, but Kazakhstan needs to become more pro-active in introducing upgraded agricultural systems.

Future Advocacy

AmCham will continue to follow *COP26* when it opens in Glasgow and will report on Kazakhstan's participation, as well as on discussions by world leaders and environmentalists at the Glasgow Conference.



WORKING GROUPS UPDATE SEPTEMBER – OCTOBER 2021

AmCham Working Groups resumed meeting in September beginning with the *Almaty Technology and Innovation Working Group*, which followed up on topics introduced before the summer. Other Working Groups are being scheduled at present. For the time being, the Groups will continue meeting on-line, bringing together similar Groups from different cities under one Chairman. This has proven an efficient model enabling members to exchange ideas with their counterparts in different cities and to strategize joint initiatives, communications, and meetings with the government.

It is expected that the joint Working Group model will be maintained until quarantine restrictions are lifted. AmCham notes with approval that a number of the Groups have undertaken direct communications and interaction with government agencies at the Deputy Minister and Ministerial level – a sign of the Groups' increasing sophistication in handling the topics they are addressing, and the regulatory and legislative improvements they wish to bring about.

The *Inter-Ministerial Working Groups* (groups that meet solely for the purpose of advancing specific reforms through Ministries at a senior level) will also soon resume their meetings on a virtual platform: the *Tax Reform Working Group* led by Chairman and Deloitte Tax Partner Anthony Mahon, and the *Intellectual Property Rights Working Group* led by U.S. Senior Commercial Officer Donald Townsend. The latter Group is mainly focused on pharmaceutical and healthcare issues and their meetings are conducted with the Ministry of Health.

In addition, the *Inter-Ministerial Renewable Energy Working Group* will resume meeting soon with the Ministry of Ecology. The Group is seeking a new Chairman, soon to be appointed.





Almaty Technology and Innovation Working Group, 28 September 2021

On September 28, the *AmCham Technology and Innovation Working Group* met online chaired by *Sergey Leschenko, Microsoft Country Manager*. Guest Speakers were *Dinara Tanasheva, Partner, Tax & Law Leader for Kazakhstan/ Central Asia* and *Nargiz Suleimenova, Senior Associate, Tax & Law Department*. Their topic was *Cloud Services in the Context of Kazakhstan's Regulatory Landscape*. The purpose of the presentation was to inform about the use of cloud services, their regulatory requirements and key provisions.

Cloud services can include granting of servers, storage capacity, databases, networks of software, analytics, or data mining. There are 3 cloud service deployment models: *Public, Private and Hybrid Clouds*. Kazakhstan's legislation provides for the requirements and conditions for using cloud services - both public sector and personal data.

The presentation focused on cloud computing by the government, financial, and oil & gas sectors, as well as the electricity market. Other sectors using the cloud are healthcare, telecommunications, education, and economic sectors.

The Group suggested an online meeting with the *Minister of Digital Development, Bagdat Mussin*, that would determine potential cooperation to further develop cloud services in Kazakhstan.

WELCOME ADDITIONS TO THE CHAMBER

NetFlix

CORPORATE A

Reed Hastings
Global CEO
Los Gatos, California

Alexander Long
Netflix European Representative
Amsterdam, The Netherlands

Email: *Allong@netflix.com*
Website: *www.netflix.com*

Founded in 1997, Netflix is the world's leading streaming entertainment service with 214 million paid memberships in over 190 countries where members enjoy TV series, documentaries and feature films across a wide variety of genres and languages. Netflix initially both sold and rented DVDs by mail, but sales were eliminated within a year to focus on DVD rentals. In 2007, Netflix introduced streaming media/video on demand. Today 40% of Netflix original programming is produced in-house. The company has also played a prominent role in independent film distribution.

Netflix has won numerous *Emmy Awards*, *Golden Globes*, and *Academy Awards* for the high quality of its original television productions and films.

On October 13, 2021, Netflix announced the launch of the *Netflix Book Club*, where readers will hear about new books, films, and series adaptations. The company will partner with Starbucks to bring the book club to life via a social series called *But Have You Read the Book*?

Netflix is headquartered in Los Gatos, California and is ranked 164th on the Fortune 500 and 284th on the Forbes Global 2000. It is the largest entertainment/media company by market capitalization. During the last decade, Netflix was the top-performing stock in the *S&P 500* stock market index, with a total return of 3,693%.

Alfa Bank

CORPORATE A

Andrey Timchenko
CEO

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Website*: www.alfabank.kz*

Alfa-Bank has been operating in Kazakhstan for more than 27 years and is part of ABH Holdings S.A. The Bank's mission is to help customers live at ease by offering them instant service. Alfa-Bank Kazakhstan has been setting high standards of corporate governance since 1994.

During almost three decades of sustainable and gradual development, the Bank has extended its horizons throughout Kazakhstan and opened 14 regional branches. More than 3,000 employees provide service to over 1,540,000 (635,000 active) customers.

The bank's net profit over 8 months of 2021 amounted to 24.2 billion tenge, an increase of 27% over the same period last year. Alfa-Bank's stability has been confirmed for the fifth year in a row by Fitch Rating (BB-) and Standard & Poor's (BB/B).

Alfa-Bank always keeps up with the times and follows the latest trends. It was one of the first to introduce Apple and Samsung Pay and enable its customers to pay for goods and services via smartphone. The Bank was the first in Kazakhstan to launch SWIFT gpi - a system of swift international transfers. Alfa-Bank also supports educational projects such as the Alfa Data School, Scrum Masters School, and UX/UI Testers School.

Marks & Sokolov

CORPORATE B

Kirill Ratnikov
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Website: *www.marks-sokolov.com*

Marks & Sokolov is an international law firm specializing in resolving complex high-value disputes, and focuses focusing on servicing clients in Kazakhstan, Russia and United States. The firm represents Kazakh, Russian and Western interests in commercial litigation and transactional matters in the United States and Western interests in Kazakhstan, Russia, and other countries of the former Soviet Union.

Over two decades, Marks & Sokolov has established a record of top-tier counselling and litigation expertise with exceptional service in areas such as commercial litigation, international contract disputes, commercial and securities fraud, RICO, 28 USC 1782 discovery, recognition of foreign bankruptcies, enforcement of foreign money judgements in the U.S., and aviation. The firm tries cases in federal and state courts throughout the U.S. and arbitrates in forums worldwide.

Kirill Ratnikov has been based in Nur-Sultan and represented the Governnment of Kazakhstan in a major international litigation and international consortium, a winning bidder of US1.1 billion infrastructure project.

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AMERICAN CHAMBER OF COMMERCE IN KAZAKHSTAN

MEMBERSHIP APPLICATION

ABOUT AMCHAM

Registered in Kazakhstan as a non-profit organization in March of 1999 with 36 charter members, the American Chamber of Commerce in Kazakhstan currently represents over 200 member companies including US, multinational, and local businesses in 30 industry sectors. Their collective investment in Kazakhstan's economy is several billion USD. The American Chamber in Kazakhstan is a member of the US American Chamber of Commerce in Washington D.C. and has working relationships with many regional business associations.

BENEFITS OF MEMBERSHIP

- ✓ AmCham members participate in an organization existing solely to serve members
- ✓ AmCham actively advocates for reform of the business environment with Kazakhstan Government at senior levels
- ✓ AmCham Members may attend 19 Working Groups in 5 cities plus Inter-Ministerial Working Groups
- ✓ Monthly speaker luncheons with senior government and business leaders are reserved for AmCham members
- ✓ Seminars, conferences, and monthly social networking events are organized for AmCham members
- ✓ AmCham membership contact lists are available exclusively to AmCham members
- ✓ Economic, political, legal, social, and business development information is distributed to members
- ✓ Member companies provide exclusive discounts on products and services to other AmCham members
- ✓ Access to the Members' Only section on the AmCham Website
- ✓ Publishing opportunities are available in *Investors' Voice*, the *Annual Membership Directory,* and Special Publications

MEMBERSHIP APPLICATION

Company Name: _____

Industry Area: _____

CEO Name, Signature, Email: _____

Contact Individual: _____

Title(s): _____

Address: _____

Tel.: _____ Fax: _____ E-mail: _____

Please include us in the following Working Groups:

Almaty (7)

- ☐ Foreign Investment
- ☐ Human Resources
- ☐ Tax
- ☐ Technology and Innovation
- ☐ Corporate Social Responsiblity
- ☐ Healthcare Reform
- ☐ Trade and Customs

Atyrau (4)

- ☐ Tax
- ☐ Human Resources
- ☐ Trade and Customs
- ☐ Corporate Social Responsiblity

Aktau (3)

- ☐ Human Resources
- ☐ Tax
- ☐ Trade and Customs

Nur-Sultan (4)

- ☐ Foreign Investment
- ☐ Tax
- ☐ Trade and Customs
- ☐ Human Resources

Shymkent (1)

- ☐ Foreign Investment

AMCHAM WORKING GROUPS

Working Groups made up of representatives from Amcham member companies provide comment, discussion and submission of positions and represent the united interests of the business community in Kazakhstan by identifying challenges faced by investors and proactively addressing them. Each group meets regularly, providing a forum for networking and the exchange of information. Groups are formed on an as-needed basis at the request of the AmCham membership.

GOVERNANCE

The AmCham is governed by a Board of Directors elected annually from and by the membership. Directors currently and in the past have included individuals from the following company members:

AES
AIG Insurance
Baker & McKenzie
BASF Central Asia
BG Group
Bracewell and Giuliani
Capital Bank
Chevron
Citibank
Conoco Phillips
Coca-Cola
Dechert
Deloitte
EBRD
Ernst & Young
GE International
Halliburton
HSBC
Hyatt Hotel
Honeywell
Intercontinental Hotel
KIMEP
KPMG
LeBoeuf, Lamb, Greene
Nestle
Philip Morris Kazakhstan
Philips Kazakhstan
PricewaterhouseCoopers
Procter & Gamble
Raytheon
Scot Holland CBRE
Tengizchevroil
Visor Capital
White & Case

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Doris Bradbury
Executive Director
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Anna Balitskaya
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Aigul Sauranova
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Dorin Baru
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Resident Representative, Aktau
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Wojciech Hałat
CEO HeidelbergCement
Resident Representative, Shymkent
Wojciech.Halat@heidelbergcement.kz

MEMBERSHIP CATEGORIES AND ANNUAL FEES

Corporate A	(Worldwide revenues in excess of 100 million USD)	$5,000 USD
Corporate B	(Worldwide revenues between 2-100 million USD)	$3,800 USD
Corporate C	(Worldwide revenues not exceeding 2 million USD)	$2,700 USD
Non-Profit		$1,500 USD
Individual**		$500 USD

***Individual memberships are available only under special circumstances for persons not associated with a company.*

Corporate membership entitles a company to delegate 3 individuals as AmCham voting members. The number of persons from each company participating in working groups, forums, and business roundtables is usually not limited.

All applications for membership must be approved by the Board of Directors of the American Chamber of Commerce in Kazakhstan. For further information about membership benefits, the application process, or Investors' Voice magazine, please contact: info@amcham.kz



Energy is reinventing itself, Total is becoming TotalEnergies.

TotalEnergies



Building a world that works