

IV Investors' Voice

The American Chamber of Commerce in Kazakhstan

Kazakhstan's leading International Business Association



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Special Climate Change Issue COP26 – The Urgency of Energy Transition

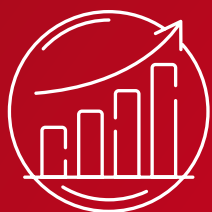


- ▶ A Global Landmark in Glasgow
- ▶ Kazakhstan and the Path to Net Zero
- ▶ The Global Methane Pledge
- ▶ Decarbonization as a Catalyst for Foreign Investment
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- ▶ The Geopolitics of Energy
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- ▶ Oil and Gas Companies – Their Role in Energy Transition
- ▶ COP26 Outcomes and IEA Follow-Up
- ▶ After Glasgow COP26, What's Next?

SOCIO-ECONOMIC IMPACT OF THE COCA-COLA SYSTEM IN KAZAKHSTAN

Global consulting company EY has conducted an independent study for the Coca-Cola System in Kazakhstan, to assess its contribution to sustainable development of the country during 7 years, between 2013 and 2019.

The Coca-Cola System in Kazakhstan consists of The Coca-Cola Company (Coca-Cola CIS Services Ltd.) and its bottling partner Coca-Cola Icecek (JV Coca-Cola Almaty Bottlers LLP), which produces, markets and sells non-alcoholic beverages in Kazakhstan. The report analyzes contribution to all three aspects of sustainable development: economic, environmental and social.



₸ 493 bln

total contribution to Gross Domestic Product of Kazakhstan



₸ 135 bln

paid taxes and other payments in the government's budget



7800

people

were provided with jobs in various sectors of economy, directly and indirectly*



₸ 110 bln

was the contribution to the labor income of the population of the Republic of Kazakhstan



1.6 bln liters

of water were returned to the nature every year through implementation of water supply rehabilitation projects. It is 2 times higher than the volume of water required for production of beverages by the Company in 2020.



1 %

of the cost of each bottle of the Company's products bought by our consumers is invested in environmental or social initiatives



\$6 mln

was invested in implementation of social projects



АКЦИОНЕРЛІК ҚҰНДЫЛЫҚТЫ ҚАЛЫПТАСТЫРУ
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GENERATING SHAREHOLDER VALUE



ҚОҒАМДЫ ҚУАТТАНДЫРУ
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ТАЗА НӨЛДІК ШЫҒАРЫНДЫЛАРҒА ЖЕТУ
ЧИСТЫЕ НУЛЕВЫЕ ВЫБРОСЫ
ACHIEVING NET-ZERO EMISSIONS



ТАБИҒАТТЫ ҚОРҒАУ
ЗАБОТА О ПРИРОДЕ
RESPECTING NATURE

ПРОГРЕССТІ ҚУАТТАНДЫРУ
ЭНЕРГИЯ ДЛЯ ПРОГРЕССА
POWERING PROGRESS



EDITOR'S NOTE:

CLIMATE CHANGE AND EXPECTATIONS FOR 2022



Dear Readers,

The *February Special Issue of Investors' Voice* is a fitting beginning to 2022 connecting us to one of the most important events of 2021 - COP 26, the *Glasgow Climate Change Summit* held in early November 2021. The two-week Summit of the world's political and environmental leaders to determine action to combat the global Climate Crisis was the center of attention as it set the agenda for the world's environmental future.

Kazakhstan is a signatory to the *Paris Accord* underlying COP26 and future *COP Climate Change Summits*. Thus, Kazakhstan is an active participant in the commitments outlined in the Summit's concluding *Climate Action Pact*. For this reason, AmCham devoted three of its Council sessions with the Government in 2021 to the COP preparations and concluding commitments that will be closely monitored in the year ahead.

With COP27 already planned for 2022, Kazakhstan must demonstrate its seriousness of purpose for the over-arching goal of *Energy Transition*, which will maintain the country's traditional energy base while developing its renewable energy resources. Kazakhstan has rich renewable energy potential that is attracting investment attention, but it remains to be seen how this potential will be managed as the Government grapples with the dual challenge of rebuilding Kazakhstan's economy after the global pandemic, which has not yet ended.

For the three Council meetings with the Prime Minister and Cabinet leading up to and concluding COP26, AmCham invited speakers from a broad range of backgrounds with diverse perspectives on the Climate Crisis that is already at a critical juncture. Our speakers were leaders from a variety of institutional backgrounds – international financial institutions, diplomacy, and the corporate environment - and a broad range of countries. This diversity lent a richness to their approaches, a unique collection of viewpoints that must be taken into consideration in planning for the future.

Speaker presentations from Council sessions, but especially from the *December Council Session* with its focus on *Financing the Global Energy Transition: The Next Challenge*, are published in this *Special Issue*. AmCham hopes you will find the articles thoughtful and thought-provoking as we head into 2022, a year that will not lack challenges for our leaders and for all of us to resolve.

**Best Wishes to All Our Readers in 2022,
Doris Bradbury, Editor in Chief, *Investors' Voice***



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AMBASSADORS / SPECIAL ENVOYS



Marco Alberti, Ambassador of Italy to Kazakhstan

Marco Alberti is a business diplomat with a twenty-year professional background at the intersection between public and private sectors. After serving as a career diplomat in Rome, Buenos Aires, and New York, in 2012 he was appointed Head of International Institutional Affairs at Enel S.p.A., the largest European utility and global leader in renewable generation. Strongly focused on innovation-driven diplomacy, he has worked on global public affairs, climate diplomacy, and the geopolitics of renewable energy. On 1 September 2021, he was appointed Ambassador to Kazakhstan and Kyrgyzstan.

Marco Alberti graduated *cum laude* in International Law from Bologna University.



Jaime de Bourbon de Parme, COP 26 Climate Envoy for the Netherlands

As Climate Envoy, H.R.H. Jaime de Bourbon de Parme is the representative of the Netherlands for climate diplomacy. He also sits on the board of the Green Climate Fund, which assists developing countries in adaptation and mitigation practices

Jaime de Bourbon has served as Senior Advisor for Private Sector Partnerships (2018-2021) to the United Nations Refugee Agency (UNHCR) and as Ambassador of the Netherlands to the Holy See, where he partnered on climate action, forced migration and peace negotiations (2014-2018). As Special Envoy for Natural Resources (2011-2014), he initiated the Responsible Mining Index. He was selected to be a member of the Cabinet of the European Commissioner for Competition (2005-2007), served as political advisor to the Dutch Commander of the NATO Peacekeeping Mission in Afghanistan (2004) and helped set up the Netherlands Embassy in Iraq (2003).

Jaime de Bourbon holds an MA from Johns Hopkins University and a BA from Brown University.



André Carstens, Ambassador of the Netherlands to Kazakhstan, Kyrgyzstan, and Tajikistan

André Carstens rose to senior positions in the Netherlands' Ministry of Foreign Affairs and the Ministry for Security and Justice with international posts in Russia, Georgia, and Afghanistan. He headed the Netherlands' contribution to the EU Monitoring Mission in Georgia and served as Director of Governance in Mazar-e Sharif, Afghanistan. Prior to his current position, he served as Advisor to the European Counterterrorism Coordinator in Brussels.

André Carstens received his Master's Degree in Social-Economic Law from the University of Utrecht and completed diplomatic training for the Ministry of Foreign Affairs, as well as completing the Senior Leadership Program of the Netherlands Public Service.



Stéphane Dion, Canada's Special Envoy to the European Union and Europe, Ambassador of Canada to Germany

The Honourable Stéphane Dion presented his credentials as Canada's Ambassador to Germany on June 6, 2017. Prior to his appointment, M. Dion was Canada's Minister of Foreign Affairs from November 2015 until January 2017, where he championed Canadian leadership on crucial global interests including universal human rights, peace and stability, the global climate challenge and multilateralism. He was previously Minister of the Environment from 2004 to 2005, and in 2005 chaired the United Nations Conference on Climate Change (COP11/MOP1).

In 2006, Stéphane Dion was elected Leader of the Liberal Party of Canada and became Leader of the Official Opposition in the Canadian House of Commons, a position he retained until 2008. He served as a Member of Parliament first in 1996 and was re-elected seven consecutive times.

Before entering politics, Stéphane Dion taught Political Science at Université de Moncton in 1984, then at Université de Montréal from 1984 to 1995. He obtained a Doctorate in Sociology from the Institut d'études politiques in Paris.



Kestutis Jankauskas, Ambassador of the European Union to Kazakhstan

Ambassador Kestutis Jankauskas was appointed Head of the EU Delegation to Kazakhstan on 1 September 2021, having served as Head of the EU Delegation to Azerbaijan between 2019-August 2021 and Head of the EU Monitoring Mission to Georgia 2015-2017. He previously served as Ambassador of Lithuania at NATO 2011-2015 and Ambassador to the EU Political and Security Committee 2005-2009, as well as DCM at the Lithuanian Embassy in the United States. Between 2009-2011 he held the position of Permanent State Secretary/ Chancellor at the Lithuanian Ministry of Foreign Affairs.

Ambassador Jankauskas holds a Master's Degree in History from Vilnius University and was an Assistant in the Archaeology Department of the Lithuanian History Institute (1989-1991). His mother tongue is Lithuanian and he speaks English, Russian, French, and German.



Kathy Leach, U.K. Ambassador to Kazakhstan

Kathy Leach joined the Foreign Office (now the Foreign Commonwealth and Development Office) in 2000. Over the course of her career she has worked on EU trade and development, security policy, human rights, consular policy, climate change and energy, and UK-EU negotiations. She has been posted to Moscow, Tokyo and was Ambassador to Armenia from 2012-2015. Most recently, in London she was Head Policy Unit, then Deputy Director Strategy Directorate, before becoming Deputy Director Constitution and Devolution in Europe Directorate. She took up her role as Her Majesty's Ambassador to Kazakhstan in August 2021.

Ambassador Leach has a First Class Honours degree in Russian from the University of Cambridge, and during her career in the FCDO has also studied Japanese, Armenian and now Kazakh.

CONTRIBUTORS



David Moran, COP26 Regional Ambassador for Europe, Central Asia, Turkey, Iran

David Moran was appointed Regional Ambassador for Europe, Central Asia, Turkey and Iran in May 2021. After joining the UK Foreign Office in 1985, he served as Ambassador to Switzerland, Kazakhstan, and Uzbekistan, as well as non-resident Ambassador to Liechtenstein and Kyrgyzstan. He was also posted to Nairobi, Moscow, Paris, Tbilisi and Yerevan (in both cases as Chargé d'Affaires with the personal rank of Ambassador). David Moran has served in a wide range of policy and other roles in London, including as Head of the FCO's Global Economic Issues Department and Cabinet Office Deputy Director for Early Warning and Transnational Issues, covering climate change, energy and economics.

David Moran is a graduate of Sussex University (UK).



William Moser, Ambassador of the United States to Kazakhstan

William Moser was confirmed as US Ambassador to Kazakhstan on January 2, 2019 after serving as US Ambassador to Moldova. Since entering the diplomatic corps in 1984, he served in Ukraine, Egypt, Suriname, Mali. State-side he served as Deputy Executive Director for European and Eurasian Affairs, Post Management Officer in the Bureau of Near Eastern and South Asian Affairs, and Political-Military Affairs Officer in the Bureau of Political Military Affairs. He has won numerous commendations including the Secretary of Defense's Medal for Distinguished Civilian Service and the Leamon R. Hunt Award for Management Excellence.

Ambassador Moser holds a B.A. in Political Science from the University of North Carolina at Chapel Hill.

INTERNATIONAL INSTITUTIONS

European Bank for Reconstruction and Development (EBRD)



Hüseyin Özhan, Director, Head of the European Bank for Reconstruction and Development (EBRD)

Huseyin Ozhan took up his position as Director, Head of the European Bank for Reconstruction and Development (EBRD) Kazakhstan on 1 September 2021. Prior to joining EBRD, he worked as a Sector Head for the Corporate Banking and Structured Finance department at Eurobank Tekfen. He joined EBRD in January 2011 as a Principal Banker in the Transport team in Istanbul. He went on to be a Senior Banker in the same team before becoming Head of the Ankara Resident Office in 2015 and Deputy Head of Turkey in 2017. Huseyin Ozhan then moved to London in 2019 as Advisor to the VP, Banking whose remit extends to the full network of EBRD Country offices.

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.

International Energy Agency (IEA)



Dr. Fatih Birol, Executive Director, International Energy Agency (IEA)

Dr Fatih Birol has served as Executive Director of the International Energy Agency since 2015. Before the IEA, Dr Birol worked at OPEC in Vienna for six years. Under his leadership, the IEA has moved to the forefront of global efforts to reach international climate goals while ensuring that the social and economic impacts of clean energy transitions are at the heart of policy-making and energy security is safeguarded.

After taking office, Dr Birol led the IEA in its first comprehensive modernization since its creation in 1974. These efforts focused on including major emerging economies - Brazil, China, India and South Africa; making the IEA the global hub for clean energy transitions; and broadening the IEA's energy security focus beyond oil to also cover electricity, natural gas, renewables and the critical minerals needed in clean energy technologies.

Dr Birol has been named in the *TIME100*, *TIME*'s annual list of the world's most influential people. He has also been named by *Forbes* as one of the most influential people in the world of energy and by the *Financial Times* as the *Energy Personality of the Year*. He chairs the *World Economic Forum's (Davos) Energy Advisory Board*.

Dr Birol earned a BSc degree in power engineering from the Technical University of Istanbul and received an MSc and PhD in energy economics from the Technical University of Vienna.

International Monetary Fund (IMF)



Nicolas Blancher, Mission Chief for Kazakhstan, Division Chief for Central Asia, International Monetary Fund (IMF)

Nicolas Blancher is Mission Chief for Kazakhstan and Division Chief for Central Asia in the IMF's Middle East and Central Asia Department. He began his career at Société Générale in 1992 and joined the IMF in 1996 to serve in the Office of the Executive Director for France, then in the IMF's Policy Development and Review Department. He was previously Mission Chief for Morocco. Before that, he served as Advisor in the Monetary and Capital Markets Department, where he led a number of Financial Sector Assessment Programs and research and policy work on financial stability analysis and capital markets, including as part of the IMF's Global Financial Stability Report.

Nicolas Blancher holds an engineering degree received in 1987.

CONTRIBUTORS

Organization for Economic Cooperation and Development (OECD)



Pascal Saint-Amans, Director, Centre for Tax Policy and Administration, OECD

Pascal Saint-Amans is Director of the OECD Centre for Tax Policy and Administration. Mr. Saint-Amans, a French national, joined the OECD in September 2007 where he played a key role in the advancement of the OECD tax transparency agenda in the context of the G20. Prior to his appointment as Director, he was the Head of the Global Forum on Transparency and Exchange of Information for Tax Purposes since 2009.

Mr. Saint-Amans graduated from the National School of Administration (ENA) in 1996, and was an official in the French Ministry for Finance for nearly a decade.



William Tompson, Director, Eurasia Division, OECD

William Tompson is Head of the Eurasia Division in the OECD Global Relations Secretariat, having previously spent seven years as a Senior Economist in the OECD Economics Department and six years in its Public Governance and Territorial Development Directorates. He is the author of over 100 publications, including books, OECD studies, articles in scholarly journals and book chapters on political economy and economic policy.

Prior to joining the OECD, Professor Tompson taught at the University of London and the University of Oxford. He has also worked as a private consultant and as an advisor to the Select Committee on Foreign Affairs of the British House of Commons and has taught at the Institut d'Études Politiques de Paris. He holds BA and MA Degrees from Emory University and a Doctorate from Oxford University.

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Eni



Luciano Vasques, Head of Central Asia Region, Eni SpA

Luciano Vasques was appointed Head of Central Asia Region for Eni SpA on 1 August 2020. He joined Eni in 1991 as a Project Engineer and during his career developed extensive experience covering the full range of the Oil & Gas business both on development and operations sides of multibillion assets, leading several Eni upstream subsidiaries worldwide.

After serving in Nigeria from 1995-1999, he moved to London in 2000 and then to Aksay, as Project Director for the Karachaganak Phase II development which went on stream in 2004. After that, he participated in Kashagan development operations: first in the Netherlands as Development Director and then in Atyrau as Director of the Kazakh branch of AgipKCO. His contribution to development of Kazakh resources earned him the Dostyk award from Kazakhstan President Nazarbayev.

Luciano Vasques received a Master of Science degree in Electronic Engineering from the Politecnico in Milan (Italy) in 1989.

Eurasia Group



Sergey Glokke, General Director, Eurasia Group Kazakhstan

Sergey Glokke has worked for Eurasia Group, the official distributor of John Deere agriculture equipment in Kazakhstan, since 2001. He has over a decade of experience supplying Kazakhstan's agriculture industry with world-class equipment and technology. From 2012-2013, he chaired the Ministry of Agriculture Working Group on Agricultural Engineering. Currently, he is General Director of Eurasia Group Kazakhstan, as well as Chief Operating Officer of Eurasia Group Switzerland.

Sergey Glokke graduated from Kyrgyz-Russian Slavic University, Faculty of International Relations, with a Bachelor's degree in Political Science. He also holds a Master's degree in International Relations.

EY



Erlan Dosymbekov, Managing Partner, EY Kazakhstan

As EY Managing Partner in Kazakhstan and Central Asia, Erlan Dosymbekov supervises a variety of projects in the region, most of which are aimed at public sector reforms, including infrastructure development, cleantech, regional integration, and tax and customs administration. He is also part of the EY Emerging Markets global network. He specializes in advising EY's corporate clients throughout the Caspian region on tax, transactions and international structuring, and is a member of the Caspian Mineral Resource Committee under the International Tax and Investment Center (ITIC).

Erlan Dosymbekov holds a BA degree in Finance from Eurasian National University (Kazakhstan).

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Béla Ferenczi, President, GE Russia/CIS

Béla Ferenczi is President of GE Russia/CIS, responsible for the company's wide-ranging activities in the region. He joined GE in 2006, performing a series of leadership roles in the company's Power businesses and Global Growth Organization, and most recently serving as Regional Executive for Central Asia and Azerbaijan.

He serves as Vice President of the Board of Directors of the American Chamber of Commerce in Kazakhstan and is also a member of the Board of Directors of the American Chamber of Commerce in Russia.

Béla Ferenczi holds a B.A. in Economics from Plekhanov Russian University of Economics and an MBA in Finance Strategy from The Open University (UK).

IHS Markit



Simon Blakey, Managing Director, SAB Global Energy; Senior Associate, Energy Group, IHS Markit

Simon Blakey is a leading authority on the European energy industry. Previously, he acted as Special Envoy for EUROGAS, the association of European gas companies from September 2010 through June 2014. In 1989 he founded the European natural gas and power research practices at Cambridge Energy Research Associates (CERA) prior to its acquisition by IHS Markit. Before joining CERA, Simon Blakey was Special Assistant to the Executive Director at the International Energy Agency in Paris. He also previously worked for BP and for the ADL energy group.

Simon Blakey holds an MA from Cambridge University.

KATCO



Gerard Fries, General Director, KATCO

Gerard Fries began his career at Elf Aquitaine (now Total) in 1987, holding various operational positions in Exploration & Production in France, Gabon, Kazakhstan, Russia and the United Kingdom. In 2001 he joined the Institut Français du Pétrole as Executive Vice-President and Director of the Exploration-Production Technical Business Unit. From 2001 to 2004, he was President of IFP Investissements.

Gerard Fries joined Veolia Environment in 2006 as Veolia Environmental Services Technical Director, and from 2011-2012 he served as Veolia Environment Research and Development Program Director. He joined Areva (now Orano) in 2013 and in June 2013 he was appointed as KATCO General Director.

Gerard Fries is a graduate of the École Polytechnique (Paris) and the École des Mines (Paris) and holds a Doctorate in Earth Sciences from Pierre and Marie Curie University.

Mack Law



Kenneth Mack, Principal, Mack Law, PLLC

Kenneth Mack is President of the American Chamber of Commerce in Kazakhstan. He is also the Principal at Mack Law, PLLC, which advises energy and infrastructure companies investing in Kazakhstan on acquisitions, finance and dispute resolution, including investors developing sustainable, low carbon-producing projects. Acting for foreign investors, he has been the lead attorney on many of the major foreign direct investment projects in Kazakhstan during the past 25 years. As AmCham President, Mr. Mack has advised the Prime Minister and leading Cabinet Ministers on legal reforms relevant to the foreign investment community.

Kenneth Mack has been recognized by The Legal 500 and Chambers Global in the categories of corporate/commercial law and energy and natural resources. He earned his law degree from Northeastern University School of Law (JD 1993) and holds a Master of International Affairs from Columbia University (MIA 1995).



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ANTICIPATING THE NOVEMBER COP26 CLIMATE CHANGE SUMMIT: A GLOBAL LANDMARK IN GLASGOW

by Ambassador David Moran
UK COP26 Ambassador



Very few international conferences are able to make history. The 2015 Paris Climate Summit did, by agreeing binding international targets to tackle global climate change. The Glasgow COP26 Summit in November 2021 has the chance to go even further, and Kazakhstan is well placed to play a leadership role.

The Paris Agreement includes an obligation to review progress every five years. This enables us to check whether our commitments are sufficient or need to be strengthened in line with the latest scientific findings. The recent report by the IPCC, the leading world body for assessing climate change, could not be clearer - human activity is damaging the planet at an alarming rate and climate change is already affecting every region.

PARIS CLIMATE AGREEMENT



Prepared by scientists from around the world and agreed by governments, the report is a stark warning that the world is warming faster than previously estimated. Immediate action is essential. The alternative is the risk of catastrophic damage far worse than today's extreme heat, droughts, floods and wildfires. And it is much cheaper to act now - the economic and human cost of delaying or not acting at all would be much higher.

That's why COP 26 is so important. Glasgow Summit is our best chance to agree collective action to keep the planet's temperature under control and build a more climate-resilient future. The Paris overall temperature goal is "holding the increase in the average global temperature to well below 2 degrees centigrade above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 degrees centigrade above pre-industrial levels."

Every fraction of a degree matters – a rise of 2 degrees would be much worse than one of 1.5. Therefore, we must do all we can to keep the 1.5 target within reach. That will require us to achieve by 2050 a balance between the carbon put into and taken out of the atmosphere. To do that, we have to halve carbon emissions by 2030 – just nine years from now.

Success in Glasgow means locking in a global path towards these goals. As COP26 Presidency the UK will broker the strongest possible consensus – our objective is nothing less than an ambitious, fair and inclusive outcome supported by every country and across society. We have four strategic goals - to secure commitments to:

- cut emissions
- protect nature and vulnerable people
- unlock much more climate finance for developing countries
- bring the world together to make it happen.

The international scrutiny is already intense and expectations from countries, business, civil society and individuals are high. Significant progress has been made in recent months. But not enough. More is required from governments and non-state actors. All of us, delivering together, through shared leadership. That is where Kazakhstan can play an invaluable role, and President Tokayev's announcement of Kazakhstan's pledge to achieve carbon neutrality by 2060 was most welcome.

Commitment, Ambition and Delivery

What we need for success at Glasgow is a combination of commitment, ambition and delivery. The UK Presidency is encouraging all countries, including from the G20 and particularly major emitters, to come forward with stretching short term targets, aligned with reaching net zero carbon by 2050, and accompanied by long term strategies which explain how they will get there. The short-term targets, known as *Nationally Determined Contributions* or NDCs, should be comprehensive across all economic sectors, transparent with good data and measureable targets, deliverable – integrated into domestic policies including for COVID recovery and gender perspectives.

The targets must add up collectively to what the latest science requires. Our ambition must match the need. And we should be delivering results now, through immediate action and publication of clear long term strategies. The UK will share its strategy before Glasgow. We have already enshrined in law our commitment to cut emissions by 78% by 2035, compared to 1990.

We have also used our G7 Presidency to secure stronger mitigation and adaptation commitments, as well as working through the *Adaptation Action Coalition* to help countries to build resilience and find solutions and funding for responding to climate shocks. Increasing climate finance everywhere is key. The UK doubled its own commitment to £11.6 billion over five years and is working with:

- *developed countries* to secure additional commitments to meet the \$100 billion annual target
- *multilateral institutions* on ways to facilitate developing country access
- *the private sector* to unlock significantly larger sources of funding.

Moving to Renewables

One area for immediate action is energy transition. To meet our net zero goals, the global transition to clean power needs to happen at least four times faster than at present. Countries have to encourage investment in renewable energy, limit deforestation, speed up the switch to electric vehicles, reduce methane – and accelerate their phase-out of coal.

Diversifying away from fossil fuels is not straightforward, especially for countries like Kazakhstan with extensive oil, gas and coal reserves. But it can be done. The UK's share of coal used for electricity fell from 40% in 2012 to around 1.5% now, and we plan for zero by 2024. We are already benefiting from the opportunities as green technology continues to evolve. We now have 400,000 low carbon jobs, and our Prime Minister has announced a ten point plan for green industrial revolution through a £12 billion government investment to support high-wage, low-carbon jobs and spur up to three times as much in private investment. The ten year goal is two million green jobs.

Put simply, clean growth presents the most significant economic growth opportunity of the 21st century – one estimate is that it could deliver economic benefits worth 26 trillion dollars to 2030. And Kazakhstan is in an excellent position to benefit; the potential of the country's renewables sector is impressive, as the government's goal of renewable energy providing 50% of the total by 2050 recognises.

With the huge fall in renewable energy generation costs in the past decade, solar photovoltaics and onshore wind are now the cheapest sources of new build generation for at least two thirds of the world's



population. Today's coal investments risk becoming major financial burdens - "stranded assets" - by 2030. Many already cost more to run than new renewable generation.

We are encouraging countries to join the *Powering Past Coal Alliance* (<https://www.poweringpastcoal.org/>) as a way of easing their transition. It is playing a real role in driving progress and has more than 130 members including national, regional and city governments, businesses and other organisations.

Time is very short. National and international targets must translate into action, and quickly. The UK will continue to re-examine our commitments, and urge others to do the same. In the coming weeks we must use every event, every discussion, to encourage and support higher ambition. There is so much that business, civil society and individuals can do to contribute, both to the global climate discussion and through net zero targets and actions. Campaigns such as *Race to Zero* and *Race to Resilience* are good ways to get involved. Everyone is affected by climate change and everyone should have the chance to contribute to the response.

In my role as COP26 Regional Ambassador, I will continue to work with partners in Kazakhstan and elsewhere on our common goals to limit global temperature rises, protect vulnerable countries and communities, boost climate finance - an area where Kazakhstan is already active - and help all parts of society to play a role.

The United Kingdom has a wealth of experience and expertise in transitioning from fossil fuels to renewable energy which we will happily to continue to share with Kazakhstan. The UK Presidency very much looks forward to welcoming President Tokayev and Kazakhstan's delegation to Glasgow, where the international community will have the opportunity to agree to act decisively to protect the planet and lock in a pathway to a sustainable future.

U.S. VIEWS ON ALTERNATIVE ENERGY, CLIMATE CHANGE: IMPLICATIONS FOR KAZAKHSTAN'S ECONOMIC DEVELOPMENT

by Ambassador William Moser
Ambassador of the United States to Kazakhstan



Alternative energy and climate change are important issues for Kazakhstan and for foreign investors in Kazakhstan. Alternative energy development will be important in the fight against climate change, and foreign investment will be important in developing an economy in Kazakhstan that is not based on fossil fuels.

President Biden has made clear that combatting climate change is a top priority for his Administration. As a first but significant step, on January 20 – the first day of his Administration – he signed the instrument to rejoin the *Paris Agreement*. The Administration is now pursuing a three-pronged approach with our international partners:

- *In the short-term*, a “green recovery” focuses not on simply recovering from the COVID-19 pandemic, but building back better, in a way that meets the climate change challenge, creates good jobs, and promotes sustainability.
- *In the medium term*, we are pursuing an ambitious 2030 *Nationally Determined Contributions* under the *Paris Agreement*.
- *In the long-term*, we are making a national commitment – and encouraging other countries to make national commitments – to achieve net-zero emissions by mid-century or before.

While progress in the United States is crucial, more than 85% of global emissions come from outside the United States. To solve climate change, the rest of the world will also need to accelerate progress. U.S. business can be a key partner in Kazakhstan's efforts to meet its own ambitious commitment to reach net-zero emissions by 2060.



The U.S. Government is assisting Kazakhstan and other Central Asian countries to develop renewable energy generation capacity and to increase energy efficiency, which will reduce greenhouse gas emissions. We look forward to expanding our renewable energy partnerships.

American investors are actively seeking ways to develop alternative and clean energy to combat climate change. For example, U.S. companies in the oil and gas sector are working closely with the Kazakhstani government to develop a new policy for a low-carbon economy. We look forward to the outcome of those discussions.

In addition, U.S. companies have a great deal to offer in the areas of wind power, solar power, nuclear power, efficient natural gas power, carbon capture and sequestration, smart grids, and energy efficiency – all of which have enormous implications for reducing Kazakhstan's carbon footprint. But these companies need a strong signal from the government about Kazakhstan's strategic plans for its power generation sector. Also, like all investors, they need a fair playing field, including a just tax policy, predictable government regulation, and the even application of the rule of law.



In an effort to attract other American firms to the market, the U.S. Department of Commerce organized a virtual event in July to promote business and investment opportunities for renewable energy development in Kazakhstan. U.S. companies see real potential for alternative energy in Kazakhstan, and if the market conditions are right, American firms will seize the opportunity to bring their technologies and investment to this market.

Kazakhstan is taking climate change seriously and has set a target to reach net-zero greenhouse gas emissions by 2060, as announced by President Tokayev during the *UN Climate Ambitions Summit* in December 2020. Kazakhstan is also working on updating its *Paris Agreement Nationally Determined Contribution*, an accompanying *Roadmap*, and a *Low Carbon Development Strategy*, which it will unveil

in the run-up to the *26th United Nations Climate Change Conference - COP 26* - in Glasgow later this year. We look forward to seeing how these policies will guide Kazakhstan's transition and the role of U.S. investment in that transition.

Of course, the road ahead will not be easy. Kazakhstan depends on hydrocarbon extraction for a significant share of its economy. Greenhouse gas emissions have been rising for the past years instead of declining. The key is to close the gap between the ambitious goals Kazakhstan has laid out and the climate reality on the ground, in a way that minimizes and fairly shares the economic cost and maximizes the ability of the private sector to contribute to solutions.

In addition to incorporating alternative energy, it is also important to build resilience to climate change. The U.S. Agency for International Development (USAID) is actively partnering with Kazakhstan to address



the vulnerabilities of Kazakhstan's water, agriculture, and energy sectors to climate change. The U.S. Government is also working with the Kazakhstani Ministry of Ecology to address the environmental impacts of the disappearing Aral Sea.

The government of Kazakhstan has made commendable strides to create a welcoming climate for foreign investors in the alternate energy sector, and the United States looks forward to working with Kazakhstan to make it even better.



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TACKLING CLIMATE CHANGE: VIEWS FROM THE UK AS COP26 HOST

by Ambassador Kathy Leach
U.K. Ambassador to Kazakhstan

The United Kingdom was the Host Country and Presidency Designate for the November COP26 Conference in Glasgow and will continue to serve in this capacity over the next 12 months. Ambassador Leach delivered the following presentation on behalf of her country's COP26 status

We are now a few short weeks from the start of COP26 on 31 October, when we will welcome – at the last count – over 125 Heads of State and Government, the largest ever event in our history. COP26 will be our first major review of progress since Paris and a re-assessment of what we must now do to keep climate change in check – and that means ‘*keeping 1.5 alive*’, that is keeping to a policy pathway which maximises the chances of limiting global warming to no more than 1.5 degrees.

The bad news is that the world has changed since 2015 and climate change is accelerating. Whilst our commitments at that time were seen as ambitious, the most recent science shows they no longer look adequate for the world of 2021. We are grateful for Kazakhstan's commitment to the *Paris Agreement* through its *Nationally Determined Contribution (NDC)* – an unconditional 15% reduction on 1990 levels, or 25% with support. We also commend President Tokayev's leadership in setting a net zero goal for 2060. We do not underestimate how challenging this goal is for Kazakhstan.

However, as became clear after the *July Climate Change Ministerial Meeting*, although progress has been made on increasing ambition and delivering the \$100 billion per year finance target, we are not yet in a place where we can be sure of meeting the 1.5 degree target. **This is why the central theme of COP26 is to ask every single country to raise its ambition – and to make its planning assumptions as transparent and concrete as possible.** The UK is now committed to increasing our emissions reduction targets to 68% by 2030 and 78% by 2035, based on 1990 levels.

The U.K. Regional COP26 Climate Ambassador, David Moran, was briefly in Nur-Sultan to speak to your Ministers, and also to other important organisations like *AIFC* and *KazMunayGaz*, about Kazakhstan's NDC and ambitions on policy, technology and raising green finance. We know a great deal of work is going into producing a comprehensive and concrete plan – the *Low Carbon Economic Development Strategy* – to show how Kazakhstan will meet its commitments.



I understand this will be published on 13 October. We look forward to seeing this, and to further understanding how the UK, other countries and International Financial Institutions can help support the investment, technology and pace of installation of new infrastructure which Kazakhstan will need to meet and, we hope, exceed these commitments.

U.K. Prime Minister Boris Johnson said at UNGA that, as we take on the COP Presidency for the coming year, our top priorities should be ‘**coal, cars, cash, and trees**’. This means focusing ruthlessly on the phasing out of coal as soon as possible; the transition to electric vehicles; mobilising the domestic and international finance we need for a green transition; and committing to protecting our forests and ensuring our land use minimises emissions. All of these are important for Kazakhstan, but here, where coal produces over 50% of emissions and some 70% of electricity is produced using coal, the pathway to reducing and eliminating coal is absolutely critical.

On this subject, the UK has some experience to offer. Back in 2008, four fifths of our electricity came from fossil fuels. Emissions from the sector had barely changed for years. Renewables generated just 6% of electricity. Electricity demand had been rising for decades. But since then, the U.K. has cleaned up its electricity faster than any other world economy. Just in the last nine years the U.K. energy mix has shifted from 40% of coal in power generation in 2012 to around 5-7% now. The U.K. electricity grid now sometimes runs – once for 18 days – without burning a gram of coal for the first time since 1882.

Over half the U.K.'s electricity is now low-carbon – renewables and nuclear. Renewables have filled the gap left by fossil fuels, along with falling electricity demand, despite our increasing population. We have gone from, in 2008, 552 large renewables sites, and 2,000 small sites, largely houses with solar panels, to today with over 3,000 large renewable schemes and more than 800,000 small sites, generating more than a third of our electricity.

This has made a significant difference to the carbon intensity of the U.K.'s electricity; from 484 grammes of CO2 per kilowatt hour in 2012, to 207 grammes of CO2 per kilowatt hour today. This is a crucial metric.

What explains this success? Setting stretching targets and an ambitious policy framework to incentivise investment is absolutely key. Industry and investors must understand the political will is there. We did this by putting our Climate Change targets into law, in the *Climate Change Act*. But then it is essential to set out a concrete range of policies to incentivise investment and stimulate the move away from carbon. There are four areas we focused on in the UK:

- **First, dirty industries must be financially encouraged to clean up their act.** The U.K. has used a variety of methods – emissions trading, with an increasingly tough cap; a carbon tax per tonne of CO2 for the most polluting industries; a renewables levy, to increase the money to reinvest in renewables. All of these are designed to make it increasingly expensive for industries to produce carbon and have incentivised them to invest in new technology.
- **Second – creating an attractive financial framework to invest in renewables.** Investors must have confidence they will make money from renewable energy and the government must set the policy framework to scale-up fast. In 2008, the U.K. Minister of Energy used to say that it had taken 14 years to build the first gigawatt of wind power – and 14 months to build the second. This is the scale of ambition we need to incentivise in private investors. On 3 October this year, 53% of UK energy was generated from wind and solar sources alone.
- **Third – connectivity and investments in a 21st century grid.** You can't plug renewables into a 20th century grid. Developing a flexible, digital grid is essential. In addition, we have developed electricity connectivity with France, Norway, Denmark, Northern Ireland, helping us to balance demand and supply.
- **Fourth – energy efficiency.** In the UK, energy efficiency for final consumers has improved by approximately 30% since 2000. The services sector and residential housing have shown the greatest improvements, helped in some cases by government grants to replace old boilers and windows and improve insulation. A continued drive towards greater energy efficiency must be central to any government's low-carbon ambitions.

I have explained the U.K. journey in some detail because I want to show what can be achieved in just over 10 years with the right policy framework to incentivise the right investment. We warmly welcome the progress made recently in Kazakhstan, particularly to increase the use of natural gas as a transition energy source with the opening of the Saryarka pipeline to Nur-Sultan. We welcome plans to convert the *TETS-2* power plant in Almaty from coal to gas as soon as possible.

We appreciate that the transition to a low carbon economy involves significant upfront costs. International donors and financial institutions have played an important role in the development of the green economy in Kazakhstan and will continue to do so. For example, to date EBRD has financed 14 such projects, totalling **\$535 million**. However, the experience of other countries shows that the vast majority of the funding must come from private financing. This is why setting out the right policies, with the right business environment, is so critical.

Some key steps have been taken to unlock green financing. Institutions like the *AIFC's Green Finance Centre* and the KASE and AIX stock exchanges can make a significant contribution to Kazakhstan's green transition. By expanding their work to provide green financial instruments, both in Kazakhstan and in the wider Eurasia region, they can help to unlock the largescale finance necessary.

We were delighted to see the issuing of the first green bonds on the *Astana International Exchange (AIX)* last year. This year, the first green and social bonds were issued on the *Kazakhstan Stock Exchange (KASE)*. The issue of these bonds, supporting investment in renewable projects among SMEs, is a very positive step and will, I'm sure, be the first of many.

Equally important is the *Agency for Financial Regulation* in developing reporting requirements on climate risk in financial institutions. Kazakhstan has introduced other financial tools - it was the first country in Central Asia to launch a national *Emissions Trading Scheme* back in 2013, now regulating about 40% of Kazakhstan's domestic CO2 emissions. The UK hopes that Kazakhstan will take steps to expand emissions trading domestically, to toughen the caps, and link the Kazakh ETS to other successful schemes.

The UK is confident that COP26 will be the major milestone in our continuing efforts to combat climate change. The UK COP26 Presidency begins on 1 November and we look forward to working with our partners in Kazakhstan over the next twelve months of our Presidency and beyond.

KAZAKHSTAN AND CANADA: PARTNERS FOR A NET-ZERO CARBON WORLD

by **Stéphane Dion**
Special Envoy to the European Union and Europe

The Climate Crisis: we all know the magnitude of the problem. To maintain the chances of avoiding the ravages of global warming of more than 2 degrees Celsius, the world must reach net-zero GHG emissions by 2070. Canada has committed to this for 2050, Kazakhstan for 2060. That is, essentially, for tomorrow.

As soon as possible, we must electrify our transport, capture CO₂, deploy renewables, in short, to make sure that what is discussed in forums such as this one, becomes, without delay, clean, affordable large-scale sources of energy. And of course, we need to protect our carbon sinks, especially our forests.

Our respective populations are increasingly aware of the urgency to act, as the negative impacts of climate change worsen. Think of the terrible drought that the steppes of Kazakhstan and the prairies of Canada have just experienced. These two semi-arid continental climates, with their flat grassland, relatively low precipitation, windy conditions, hot summers - cold winters, will be very vulnerable to changing rainfall patterns induced by climate change.

If we suffer such damage when the warming is currently 1 degree over the pre-industrial era, imagine what it will be like when the warming reaches 3 degrees at the end of the century, which is likely to happen if we do not strengthen our efforts. We must, therefore, cooperate more than ever on all fronts.

One of these fronts is **international solidarity**. Developed countries have pledged \$100 billion a year to help the most vulnerable countries cope with climate change. Current commitments, however, only reach \$80 billion, according to the OECD. Canada, which has doubled its own contribution, has taken the lead – with Germany – to find the missing \$20 billion, before COP 26. As humanity spent no less than \$1981 billion last year in military expenditure, it should be able to free up \$100 billion for climate solidarity.

Another front is **carbon pricing**. To achieve a carbon neutral world, emitting greenhouse gases into the atmosphere must cease to be free. Kazakhstan and Canada are both developing their carbon pricing systems. It is important that our two countries, on

the one hand, compare how we proceed to make our carbon pricing systems ecologically efficient and socially fair, and on the other hand, cooperate closely on the multilateral scene, especially during COP 26, so that more and more countries take the necessary path of carbon pricing.

Another front is the **capture of CO₂**. Kazakhstan and Canada are both fossil fuel exporting countries. We must find a way to extract this resource without emitting greenhouse gases. To do this monumental change, carbon capture storage and utilization must stop being a niche, to instead become a technology used systematically and on a large scale. Canada offers its full cooperation to Kazakhstan and all other partners to achieve this fundamental objective.

There is also the vast field of **non-emitting energy sources**. Canada applauds Kazakhstan's goal to generate half of its electricity from alternative energy by 2050. Canada, which now produces 80 percent of its electricity from non-emitting sources like hydro energy, nuclear energy, wind, and solar, is willing to closely cooperate with Kazakhstan to achieve our mutual goals in this sector. We need to push our cooperation even further in the field of nuclear energy, but also in other emerging fields, such as hydrogen. I am sure that Cameco, for example, Canada's largest investor in Kazakhstan, could serve as a great asset for this endeavor.

Coal is the most CO₂ emitting energy source and one way to phase it out quicker is to use natural gas as an intermediate step. As you know, a Canadian investor, Condor Petroleum, is currently exploring a cutting-edge LNG project in Kazakhstan. Canada's natural gas industry has world-class capacity in emissions reduction.

There are so many other key sectors in which Kazakhstan and Canada must cooperate, to reduce our GHG emissions and build a sustainable economy, including in agriculture, forestry and waste reduction management. However, what is most crucial is the need to further strengthen the cooperation that our two countries have initiated on sound water management.

Access to water is the global challenge of the century that the climate crisis will only worsen, as we see all too clearly in Central Asia.

In order to move forward on all these exciting and necessary projects, the Canadian Embassy stands ready to support Kazakhstan. Canada's partnership with Kazakhstan can be enormously valuable in protecting our relationship with our planet.

THE NETHERLANDS AND KAZAKHSTAN – PARTNERS IN CONFRONTING CLIMATE CHANGE

by Jaime de Bourbon-Parme
Netherlands Climate Special Envoy to COP26

The Netherlands wishes to present its position with regard to the upcoming *UN Climate Change Conference* known as COP 26 that will be held in Glasgow, Scotland in November.

The *Paris Agreement* was a landmark. For the first time, 196 nations signed a legally binding agreement to combat climate change and adapt to its effects. Kazakhstan was early, less than two years after the Paris Agreement, to choose ‘*Future Energy*’ as the overarching theme for the Kazakhstan ‘*Expo*’, held in Nur-Sultan in the summer of 2017. However, the main question remains “*How do we ensure safe and sustainable access to energy for all while reducing CO2 emissions?*” The same applies to how to include international cooperation, technology transfer and energy investments?

Over the past 30 years, Kazakhstan has proved that it's able to develop tremendously in a matter of just a few decades. One could say that Kazakhstan was gifted with significant resources that made the country one of the world's top ten energy exporters. I'm proud to say that the Netherlands, as the largest investor in Kazakhstan, served as a key partner.

Yet again, we face the crucial challenge: to turn the country's over-dependency on fossil energy, into a more sustainable energy mix in order to meet its own climate commitments, the *Nationally Determined Contributions (NDCs)*. Kazakhstan must drastically, and preferably rapidly, de-carbonize and diversify its economy. Kazakhstan will manage this challenge. Once again, our two countries could and should cooperate as we have so much in common and can mean so much for each other. Think of agriculture, windmills and other renewables.

The main goal remains to limit global warming to well below 2 degrees, preferably to 1.5 degrees Celsius, compared to pre-industrial levels and to achieve a climate-neutral world by mid-century. Now that all of our countries, including Kazakhstan and the Netherlands, have submitted their NDC plans for climate action, the next step is to take stock of these NDCs.

We need game changers in terms of climate change. It's time to deliver NOW. Climate ambition needs to be increased and emissions need to be lowered while building resilience to adapt to the impact of rising temperatures. The Netherlands knows this better than any other country as more than one-third of our country is below sea level.

The Netherlands looks forward to joining forces and sharing expertise with Kazakhstan at COP26 in Glasgow in November.

PARIS CLIMATE AGREEMENT



THE CHALLENGE OF CLIMATE CHANGE: THE EUROPEAN UNION PERSPECTIVE

by Ambassador Kestutis Jankauskas
Ambassador to Kazakhstan
European Union Delegation

European Union Commitments: Adopted on 30 June 2021, the European Climate Law (in force from 9 July 2021) has created a legally-binding target of net-zero greenhouse gas emissions (GHG) by 2050 (previously 80%), as well as an interim target of 55% reduction of emissions (previously 40%) compared to 1990 levels by 2030. An updated EU Nationally Determined Contribution (NDC), reflecting a 55% reduction in GHG by 2030 against a benchmark of emission levels in 1990, was submitted to the UNFCCC in December 2020.

The latest findings of the *Intergovernmental Panel on Climate Change* underline yet again the need for urgent action - cutting emissions fast enough to avert catastrophic climate change.

The EU has agreed, under the new *European Climate Law*, to become climate neutral in 2050. To make this long-term target realistic, the EU has upgraded its *Nationally Determined Contribution (NDC)*. The EU has also developed concrete proposals and adopted a new 2030 target of at least -55% compared to 1990, the so-called 'Fit for 55' package.

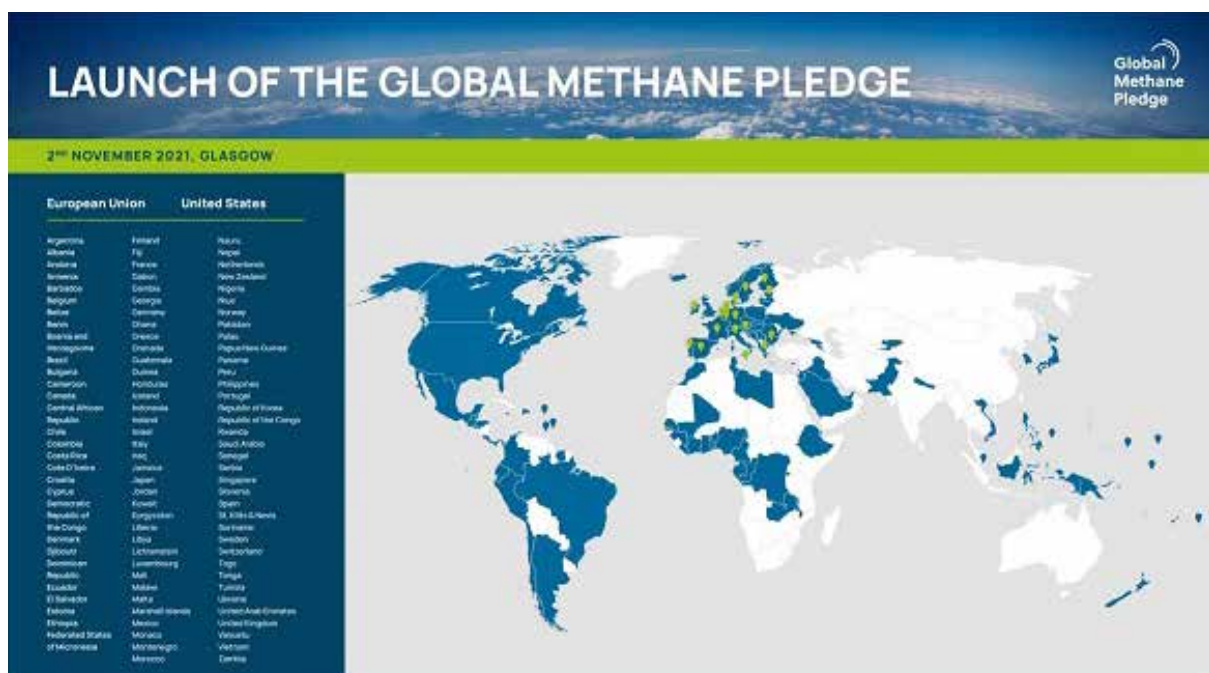
We encourage all countries to act responsibly, update and enhance *Nationally Determined Contributions* to respond to the urgency and reach the Paris

goal. Together with the USA, we have initiated the *Global Methane Pledge* - a political commitment to substantively reduce methane emissions in the coming decade. Methane has 80 times the warming power of carbon dioxide over the first 20 years. We know that Kazakhstan Government has been working with the private sector to reduce methane emissions, and we invite your country to join the *Global Methane Pledge*.

The European Union cannot act alone as we account for an 8%, and decreasing, share of global emissions. We hope that Kazakhstan remains true to its ambition of regional leader. We offer our partnership including through dedicated fora such as the *EU-Central Asia Working Group on Environment and Climate Change*, the forthcoming *EU-Central Asia Economic Forum*, high-level dialogues and meetings of leaders addressing emissions and adaptation.

The EU is preparing an *Adaptation Communication* ahead of COP26. We are fully committed to supporting the most vulnerable countries, including through scaled-up financing. The EU and Member States' overall contribution amounts to at least one-third of the total international climate finance provided by donors. Half of our support serves adaptation objectives. We wish to see other donors follow suit.

Bringing about a fundamental transformation of the global economy will require a shift from 'the billions to the trillions'. This, in turn, will require aligning all financial flows - public and private, domestic and international. In this, the EBRD and the EIB already play an active role.



Emissions reductions on the required scale can only be achieved by taking action across a significant number of sectors.

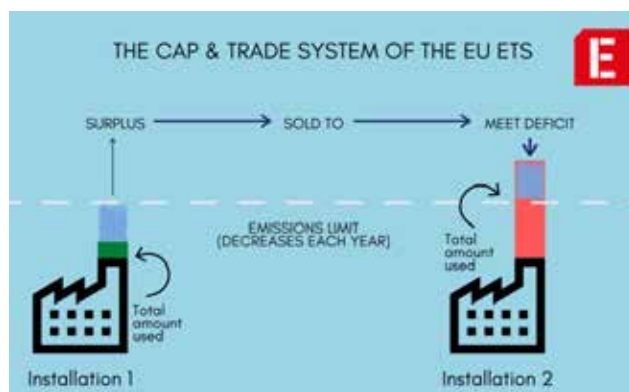
Renewable Energy

Our 'Fit for 55' package proposed an increase of the binding overall renewables target from 32% up to 40% by 2030. The European Union welcomes Kazakhstan's new ambitious target for renewables, and count on European companies to remain active in this sector here. Investors will need more clarity from Kazakhstan about the future of energy pricing and factoring in pollution and emissions.

Energy Efficiency

We have set binding targets of reducing our energy consumption through improvements in energy efficiency by 2030 by at least a third relative to a 'business as usual' scenario.

We have proposed changes to the *Energy Tax Directive*, aiming to remove exemptions and incentives for the use of fossil fuels incl. in aviation and maritime transport, while promoting clean technologies. Producing sustainable fuels for aviation and maritime transport is a huge new opportunity.



Emissions Trading

Sixteen years ago, the *EU Emissions Trading System (ETS)* became the world's first international emissions trading system to help reduce emissions. It is a cap and trade system, which currently covers around 40% of the EU's GHG emissions. The cap under the EU ETS reduces annually. Free allocation for less exposed sectors will expire by 2030.

The European Union considers expanding the scope of the EU ETS to cover maritime transport and introducing a separate emissions trading scheme for buildings and road transport. Earlier this year the EU



established a working group with Kazakhstan led by Germany that could help bring our ETS closer.

Carbon Border Adjustment Mechanism

Earlier in July, the European proposed a *Carbon Border Adjustment Mechanism (CBAM)*. It will put a carbon price on the import of selected goods to ensure that ambitious climate action in Europe does not lead to industry shifting production to countries with less stringent rules – a process known as 'carbon leakage'. Sectors covered initially are iron and steel, aluminium, cement, fertilisers, and electricity.

The design of this mechanism would mirror the emissions trading system for imports from third countries. The CBAM does not offer "double protection" for EU producers, because, as the EU gradually phases out free ETS allowances, we also gradually increase notional allowances that the importer has to pay. It is all proportional and WTO compatible.

The EU will engage with Kazakhstan and other partners to explore possibilities for dialogue and cooperation with regard to the implementation of specific elements of the Mechanism, including possibilities for concluding agreements to take into account their carbon pricing mechanism. Any decarbonisation effort will pay off, and carbon price already paid would be deducted from the CBAM amounts.

EU Taxonomy Regulation

The *EU Taxonomy Regulation (Regulation 2020/852)* establishes a classification system to determine whether an economic activity qualifies as environmentally sustainable. We hope it may serve as an inspiration to our Kazakh partners.

Agriculture

The European Union will also make its agriculture much greener through the *Farm to Fork* strategy. In process, we will engage our partner countries.

EU Support

The EU supports Kazakhstan in implementing the new Environmental Code by sharing experience and best practices from the EU through the expertise made available via our WECCOP programme. The latter also supports inter-regional policy dialogue related to climate change through the *EU-Central Asia Working Group on Environment and Climate Change (WGECC)*, which met for the 10th time on 4 October.

The EU also supports SMEs across Central Asia in their efforts to introduce equipment and production methods that meet the *Best Available Technology (BAT)* requirement through the SME Finance Facility implemented by the EBRD. The introduction of BAT is also a strong driver for EU companies to trade and invest in Kazakhstan.

In addition, the EU has a blended finance support for Micro- and SMEs provided by the EIB, in cooperation with the *Kazakh Micro-Credit Foundation (KMF)*. The EIB has plans for lending to renewable energy projects here.

Green Hydrogen

The European Union is encouraged by the interest of European companies and your government in developing green hydrogen. This will require setting up a proper regulatory framework, supporting this development, as well as finding efficient ways for transporting green hydrogen.



Minerals and Metals for Clean Energy

Turning pledges into action implies a massive acceleration in clean energy deployment; yet a clean energy system needs a lot more minerals and metals to build than the one fuelled by hydrocarbons. There is scope for our closer cooperation on critical materials. This offers an opportunity to Kazakhstan - or even a double opportunity - if Kazakhstan also pursues decarbonisation of the mining and metals sectors.



Phasing Out Coal

Historically, coal has been an important sector in Kazakhstan and we welcome your attention to preparing your coal regions for energy transition. The EU has offered to exchange transition experience and best practices with coal regions in the EU and our neighbouring countries, but so far, the interest of Kazakhstan's coal regions in this initiative has been limited.

Nuclear Power

In conclusion, let us speak about nuclear power. If Kazakhstan decides to go in that direction, we strongly encourage making safety and transparency your utmost priority. The European Union has well tested mechanisms in place that we are using to assist the operators of NPPs ensure safety of operation of their plants and develop an appropriate regulatory framework.



FUELING PROGRESS

KAZAKHSTAN AND THE PATH TO NET ZERO

by William Tompson
Head, Eurasia Division
Organization for Economic Cooperation and Development (OECD)

Kazakhstan is to be congratulated on its December 2020 commitment to achieve net zero carbon emissions by 2060. Given the country's economic structure and export profile, not to mention the political strength of the interests linked to the hydrocarbons in Kazakhstan, it is not difficult to imagine the reluctance of many critical actors to embark on the path to net zero. In making such a commitment, Kazakhstan has again taken a leading role in the region. Delivering on this promise, though, will be far harder – for Kazakhstan, as for economies around the world.

So what can the country do to ensure that net zero becomes a real, achievable goal, rather than an aspirational symbol? The immediate challenge is to translate this goal into a meaningful, well designed strategy, linked to concrete actors, deadlines, resources and milestones – the net zero “doctrine” now being revised needs to provide this overarching view. Sectoral pathways to net zero would then constitute a second step under the aegis of this strategy.

Although it is expected that the investments needed to for carbon neutrality will rise gradually and peak towards 2060, it is the decisions taken in the next few years – in Kazakhstan and around the world – that will determine whether the world can hope to achieve net zero around mid-century. The time for policy action is now.

Addressing climate change will require major changes in all areas of state policy, from infrastructure, transport and urban planning to skills development and agriculture. Labour-market policies and regional policies – especially for hydrocarbon-producing regions – will be critical. In addition, great attention must be devoted to identifying and addressing hidden barriers to greener policy.

In OECD countries, for example, we find that property tax regimes often favour extensive urban growth even where other measures are being implemented to fight urban sprawl. In addition, there is some evidence that the Basel III framework for banking regulation, which aims to restrict excessive leverage and exposure, may have had the unintended consequence of constraining access to long-term financing for capital-intensive renewables projects.



These are just two examples but they suggest a possible need for “green audits” of tax and regulatory regimes that may have such unintended consequences. At the same time, policy-makers will need to be attentive to the multiplicity of regulations governing environmental activity. In Europe, we have already observed concerns about potential double regulation, overlaps and contradictions between energy and environmental policies, in particular.

That said, I want to focus here on those most closely linked to mobilising the investment needed for the transition. In the first instance this involves addressing problems with the overall investment climate that are well known and I will not dwell on them here except to say that they are more urgent than ever. They include competition, regulation, dispute resolution, the significant state presence in the economy, and the efficiency and integrity of the public administration. Recent reform commitments point in the right direction. The challenge, as ever, will be sustained and consistent implementation, progress monitoring and policy adjustment.

The goal, though, is not just to stimulate investment but to stimulate investment in the low-carbon transition. As an economist, I start always thinking about markets and prices first. We cannot hope to make progress without effective carbon pricing, and soon. Getting the prices right does not mean the market will magically solve everything, but it will give all agents, private and public, the right incentives – incentives to conserve, innovate and invest in greener activities. There will still be an important role for other policy instruments, but the costs of all policy interventions to reduce emissions will fall and the returns to them will rise. In short, policy will be working with the market rather than against it.

Right now, carbon prices are too low. Far too low. In OECD/G20 countries, carbon emissions are currently priced under €30/tonne of CO₂, as against the €60/tonne needed by 2020 to meet the goals of the Paris Agreement. In Kazakhstan, the average allowance price was around USD 1.10 in 2020. This has to change. The proposed OECD initiative to assess and report on explicit and implicit carbon pricing efforts around the world is therefore particularly timely and can help both to promote a more level playing field international and to lift the ambition of mitigation efforts to the level required.

Wide variation across countries in carbon prices and in the stringency of climate policies can affect firms' relative production costs – and thus their competitiveness – either by increasing input prices or by requiring firms in the most stringent jurisdictions to adopt costlier equipment and processes. Ultimately, this can lead to the displacement of carbon-intensive activities to less strict jurisdictions rather than the reduction of emissions.



It is for this reason that some countries are now debating so-called *carbon border adjustment mechanisms (CBAMs)* – in essence, carbon taxes on imports that are meant to “level the competitive playing field” for domestic producers in places with higher carbon prices and/or stricter environmental controls. The challenge is to do this in a way that serves environmental objectives and creates green incentives rather than imposing protectionist trade barriers. As a carbon-intensive economy, Kazakhstan is understandably cautious with respect to the discussion of *CBAMs*.

The methodological issues here are both vital and complex.

- *Product-based approaches*, reflecting the actual carbon emissions embodied in each imported product would be the most effective in preventing leakage and transmitting price signals to foreign producers. However, designing and implementing

a robust, internationally transparent, consistent and equitable method for measuring the carbon footprints of different products would entail costly and complex regimes that would be hard to monitor and could be very difficult for countries to implement, particularly in emerging countries. This would be especially true of attempts to account for emissions embodied in product inputs, transport, use and disposal (so-called scope 3 emissions).

- *Sector-based approaches* could be far simpler but could also create perverse incentives and generate important inequities if they were not finely grained enough.
- *Hybrid methods* have also been proposed, but they would add another level of complexity to the regime. However, as the debate unfolds, I hope that OECD discussions of CBAMs will offer Kazakhstan both the opportunity to understand these issues better and the chance to participate fully in their resolution.

Getting prices right means addressing *fossil-fuel subsidies (FFS)* as a matter of urgency. The *International Energy Agency* estimates fossil fuel subsidies at around 2.7% of GDP, close to the level of public spending on education. Moreover, the share attributed to coal – the most polluting of the major fossil fuels – is exceptionally high, at around one-third. These subsidies are environmentally harmful and socially regressive, insofar as better off households typically consume more. Correcting this is no simple task. FFS reform needs to be planned, communicated in advance, and mindful of the distributional effects involved. Targeted social transfers will be needed for some groups. Diverting subsidies into investments in building energy efficiency could be another facet of the reform.

The transition out of coal will require substantial investment in supporting the transition of coal-mining regions to new activities – reskilling, redeploying workers, addressing potentially regressive impacts on specific groups and places with transitional measures to support the transition and reorienting infrastructures. Public subsidies will play a role here but so will policies that help regional and local actors, both private and public, identify new potential for local growth and development.

The critical point is that subsidies, where deployed, should serve to smooth structural changes and reduce their costs – not, as is often the case in such situations, to forestall them. Moreover, if gas is to

serve as a transition fuel, gas and utilities prices will have to adjust and better framework conditions created for the production of natural gas as an end in itself, rather than just a by-product of oil production.

At the same time, decarbonisation is both a challenge and an opportunity for the mining sector. The OECD projects a doubling of materials use by 2060, reaching 167 Gt. Many hard minerals play a critical role in low-carbon technologies, but they themselves are carbon-intensive to extract. To seize this opportunity, then, Kazakhstan must press ahead with further subsoil use reforms, especially in the field of taxation, in order to attract the capital and technologies needed to shift to more sustainable mining. The new subsoil use code introduced in 2018 was a big step forward but there is more to be done, not least in terms of assessing environmental fees, taxes, fines and other incentives and barriers, while reducing barriers to investment in sectors such as rare metals.

Accordingly, Kazakhstan needs to provide stronger positive incentives for metals and mining sectors to adopt low carbon and energy-efficient technologies – this includes not only shifting to renewable energy but also increasing material recycling, for example via public support for such technologies and techniques, and regulatory standards.

Kazakhstan can also do more to realise its tremendous potential as a renewable energy (RE) producer – particularly in solar and wind. It has met its plan to produce renewable energy by 2020 and is on track to reach the 15% target by 2030. Indeed, even more ambitious targets might be set for 2030. However, while private participation is increasing, investment in the sector continues to be dominated by IFIs and the government – one recent assessment suggest that development banks accounted for 50-60% of investment in RE since 2014. Better conditions for private investment could accelerate this growth. At the same time, this could create new opportunities to build local supply chains and *SME-FDI* linkages.

Discussion of renewables brings me back to the fundamental issue of framework conditions for investment to which I referred above. Last year, some OECD colleagues produced an econometric analysis of the determinants of investment and innovation in the renewables sector, using data on 49 countries over 15 years and employing over 70 explanatory variables. The bottom line: the effect of climate mitigation policies and measures to support the green transition in mobilising investment and prompting innovation depends to a great extent on a favourable overall investment climate.



This is true of both advanced and emerging economies. Business environment variables include, *inter alia*, property rights in land, contract enforcement, permitting/licensing regimes, access to credit, ease of trading across borders, competition and state-owned enterprises (both the scope of their activities and the corporate governance of such enterprises). The analysis suggests that the impact of targeted incentives like feed-in tariffs, renewable certificates and public tenders (auctions, competitive bidding) are more effective where overall framework conditions are better and where energy taxes are higher.

The same holds true for efforts to promote innovation, including public expenditure on research, development and deployment. In a similar vein, the recent PwC survey of investors in Kazakhstan's RE sector, conducted in Spring 2021, highlighted currency and lending risks – hardly specific to RE or even to the energy sector as a whole – as the principal risks limiting investment growth.

Sustainable infrastructure represents another major challenge. The OECD estimates that the world will need approximately USD 89 trillion in infrastructure investment across transport, energy and water systems in the next 15 years even in a “high-carbon” scenario. This eye-watering figure is about double the rate of current spending (ca €3trn/year), and closing the gap will not be easy.

However, the incremental costs of making infrastructure investments “low-carbon” rather than “high carbon” add only 4.5% to the total – so around 95% of what we need to spend on sustainable infrastructure, we need to spend in any case. Closing the infrastructure investment gap will require a policy regime that establishes price incentives and policy coherence, as well as effective steps to overcome the significant financial, regulatory and structural constraints faced by traditional sources of financing for infrastructure.

The success factors identified in OECD work include strong, consistent environmental, energy and climate policies; efficient market structure and pricing in network sectors; and sound, investment-grade framework conditions. The barriers most commonly cited by investors across countries include regulatory policies with unintended consequences; a lack of suitable financial vehicles with attributes sought by institutional investors; and a shortage of objective data and skills to assess transactions and underlying risks and returns. In short, the key challenges here are not so much with specifically “green” financing or technologies as with the traditional infrastructure investment challenges. And, once again, the basic framework conditions for investment are fundamental.

At the same time, it is critical to build sustainability concerns into infrastructure investment decisions so deeply and firmly as to avoid investing in future stranded assets. In this connection, further investment in coal-fired power generation, in particular, require the most careful consideration. Given Kazakhstan’s energy needs, though, the appeal of coal will remain unless and until policy-makers unlock the potential of gas as a transition fuel and create conditions for much faster growth in renewables, so the shift out of coal cannot be considered in isolation.

So far, I have focused on the many challenges to be overcome, but it is important to keep the opportunities in mind. Both components of “green growth” are critical: we need growth as well as sustainability. We cannot address the climate emergency by sacrificing the hopes and aspirations of the world’s less well-off. The good news, for Kazakhstan, is that the net zero transition dovetails with other strategic objectives, including the diversification of production, employment and exports; the shift to a more knowledge-intensive economy; higher productivity growth; and social inclusion. Moreover, as noted above, the country faces important opportunities in renewables (above all, solar and wind) and metals.

Finally, policy-makers need to monitor impacts in terms of environmental outcomes, not just activity. This is a problem around the world. When it comes to green bonds, for example, we have plenty of data on issuances, the market, but remarkably little on the environmental impacts of the investments financed by those bonds or of policies to stimulate green bonds.

The same holds true for the full implementation of the “best available technologies” by 2025 as per the new *Environmental Code*: this is an urgent priority but the pressure to act now should not discourage review and adjustment during the implementation phase, particularly if better technologies become available

domestically or abroad. Here, OECD initiatives like the new *International Programme for Action on Climate (IPAC)* can help – one of IPAC’s work streams is focused on data and indicators linked to climate goals, an issue on which we all have much to do.

Monitoring of outcomes is not an end in itself: it must always be connected to the evaluation and adjustment of policy. Feedback mechanisms are more important than ever, because – and we forget this at our peril – the net-zero transition is *experimental* as well as urgent. No one has ever done it before, and is no “established best practice” or “blueprint for success” to follow. That makes continuous evaluation and adjustment, as well as policy learning within and across countries, critical priorities – and for that, in many areas, we need more data.



In this context, I would note that the experimental character of the net zero transition is one reason that we need so badly to get the prices right: we do not need a top-down, command-and-control transition plan. That will never work, though we will surely require some important regulatory interventions. What we need for success is a dynamic, decentralised, bottom-up process of experimentation and innovation, throwing up technologies and solutions we might not have anticipated, but we need that experimentation and innovation to be taking us all in a common direction -- towards net zero. And that is precisely the place where clear, consistent market signals can deliver.

The task is enormous, for Kazakhstan as for all countries. The path ahead will be difficult. But the path from Kazakhstan’s independence to its current prosperity was difficult as well. Having met the challenges of the first generation of independent statehood, Kazakhstan must now take up the challenges of the second. The greatest, the most important and the most urgent of these is to protect the planet, for ourselves, for our children and for all future generations.

DECARBONIZATION AS A CATALYST FOR NEW FOREIGN INVESTMENT

by Kenneth Mack
Principal, Mack Law

President, American Chamber of Commerce in Kazakhstan

Kazakhstan will soon adopt its Long-term *Low Greenhouse Gas Emission Development Strategy*. In the Strategy, Kazakhstan undertakes to become carbon neutral by 2060. The American Chamber of Commerce in Kazakhstan applauds Kazakhstan for its ambitious carbon neutral plans.

International donor organizations stress the need to attract enormous private investment, including foreign investment, into Kazakhstan to build out the low carbon infrastructure that will replace the country's aging, and highly polluting, facilities. Kazakhstan needs the technology, experience and capital of foreign investment to achieve these goals.

This will require removing impediments to foreign investment and providing safeguards to give foreign companies confidence to invest. However, in the past thirty years there has been very little enduring foreign direct investment in Kazakhstan outside of the natural resources sector. The same obstacles that have historically interfered with foreign investment in Kazakhstan will continue to hamper the investment climate if they are not addressed and resolved.



There has been a gulf between Kazakhstan's historical declarations that it will reform the investment climate versus its actual execution of effective reforms. The problem is further complicated by the fact that new FDI in modern low carbon, energy efficient infrastructure is not necessarily consistent with the short-term economic interests of the state or the commercial interests of the private owners of certain of the country's existing productive infrastructure. Massive investment in sustainable infrastructure to decarbonize the economy runs up against the state's reliance on traditional infrastructure systems in which the existing economic and social relations of the country are strongly bound.



The latest draft of the Strategy states that *"Currently, the main obstacles to decarbonization towards net zero emissions in Kazakhstan are a variety of regulated and low prices and tariffs in a number of sectors relevant for tackling climate change, such as energy and waste."* To some extent, therefore, the country's bold decarbonization declarations collide with policymakers' fears of social disruption if the energy pricing system is interfered with. However, international agencies view the indirect control of coal-based energy pricing as a form of subsidy that will impede decarbonization.

A key thesis in the *Strategy* is that decarbonization is ultimately price competitive, and that switching to a market-based approach and eliminating artificial pricing for energy will incentivize private investment in modern infrastructure to replace obsolete, polluting infrastructure. Decarbonization is not just good for the climate; it is essential, the *Strategy* emphasizes, in attracting investment in modern infrastructure, and ultimately reducing costs and raising the standard of living in Kazakhstan.

Part of the reforms that will be needed are legislative and regulatory. For example, as international lending institutions have indicated, to attract major investment in renewable energy, Kazakhstan still needs to provide clear and reliable state guarantees for the *Financial Settlement Center's* power purchase obligations, clear indexing of the tariff to a foreign currency, and a bankable power purchase agreement allowing for foreign arbitration.

The government has been reluctant to adopt these reforms, but it won't be possible to achieve the large percentage of renewables in the energy mix, which the Strategy envisions for achieving carbon neutrality at the lowest possible price, without adopting these changes. Renewable energy is only an example that declarations on decarbonization are easy to make but fulfilling them requires decisive political action when those goals conflict with entrenched approaches and interests.

Another critical test of Kazakhstan's new resolve to pursue carbon neutrality, not only declaratively but in practice, will be finalization and implementation of the Rules on greenhouse gas (GHG) emissions, including carbon quotas and offsets and the emissions trading system.

A chief concern is that development and implementation of these Rules will provide greater privileges and leniency to domestically owned companies, favoring the coal power plants and other high carbon-producing infrastructure that the GHG regulatory regime is supposed to limit. There is a risk that in the GHG regulatory system, the authorities will recreate the discriminatory approach between industries. To incentivize private investment, the GHG regulatory system should allocate quotas and offsets fairly and proportionally based on the amount of carbon generated, not formulated to favor or protect domestic industries.

In parallel to meeting its international commitments at COP26, Kazakhstan will soon face the economic impact of the European Union's *Carbon Border Adjustment Mechanism (CBAM)*, which will affect the profitability of the country's exported manufacturing that is powered by coal and other polluting infrastructure. In responding to *CBAM*, Kazakhstan should not impose a new carbon tax aimed discriminatorily at existing foreign investors or other industries generating comparatively less carbon. The imposition of a carbon tax or other burdens that fall disproportionately upon existing foreign-owned industry would be a rule of law red flag, which would repel the new foreign investment needed to achieve carbon neutrality.



The Strategy identifies the significant positive impact of carbon capture, use and storage in reducing GHG emissions and achieving net zero emissions. Carbon capture and storage facilities will be usable by multiple industries that produce carbon, and indeed could be an opportunity for cross-industry collaboration. Kazakhstan should work closely with the major oil and gas companies that have pioneered CCUS/CCS projects in the west to design and implement CCUS/CCS in Kazakhstan as soon as possible.

To achieve the carbon neutral goals of the *Strategy*, decisive leadership is needed to break through the entrenched interests and practices that have stymied foreign direct investment outside of the natural resources sector and create the conditions for a Kazakhstan fully integrated into the world economy. Kazakhstan needs to build an economy that will allow it to achieve its international competitive ambitions. It needs an economy and political culture that will allow a stronger and more serious partnership with the leading world democracies. We know Kazakhstan has the capacity to achieve these outcomes.



REIMAGINING AND DECARBONIZING THE POWER INDUSTRY TO SOLVE THE ENERGY TRILEMMA AND IMPACT CLIMATE CHANGE

by **Bela Ferenczi**
President
GE Russia and the CIS

The past year marked a welcome acceleration of the climate agenda, as the world focuses on recovery and building new foundations for resiliency and sustainable growth. Following Kazakhstan's announcement in late 2020 of the country's target of reaching net zero emissions by 2060, the *UN Climate Change Conference (COP26)* in Glasgow has created further momentum, with announcement of the global methane pledge (*GMP*) and more than a dozen vital national commitments, including by India, Brazil and Russia.

Initiatives include the mobilization of international financing and collaboration to protect forests and vulnerable territories – and reshaping global energy by phasing out coal with greater support for renewable energy. The *International Energy Agency's* post-COP26 *Announced Pledges Scenario* indicates full execution of commitments to date can hold global warming to below 2°C, however much greater intensity will be needed by 2030 to keep our 1.5°C target within reach.

Power infrastructure is the beating heart of global development efforts – and pivotal for delivering deep decarbonization. Today the power sector is accountable for a significant share of global emissions. As demand continues to rise, the transition of national power generation and grid infrastructures to a zero-carbon future will be a cornerstone for sustainable development. Global efforts must respect and support the different position each country is in to help devise localized approaches across the international community – ensuring we can all rise to the challenge and shape the things to come.

Around the world, GE develops and deploys advanced technologies that help governments navigate their own energy transitions – built using a combination of three core elements:

- 1) *Reliable baseload generation, using natural gas, hydrogen and nuclear power*
- 2) *Renewable energy, using hydropower and zero-carbon wind and solar*
- 3) *Frontier grid, balancing and digital solutions, to reliably harness and manage a range of power sources.*



For Kazakhstan, ageing and carbon-intensive power and heating infrastructure creates an opportunity for structural change. Kazakhstan can build meaningful gains by modernizing and expanding its baseload generating capacity, driving efficiency and decarbonization. GE is on hand to supply an unparalleled range of technologies and expertise – based on the largest installed base of natural gas and nuclear steam turbines generating over a terawatt of baseload power for the planet.

The majority of Kazakhstan's power is generated today using coal, which also accounts for 74% of global power sector emissions. GE is leading by example on reducing dependency on coal – exiting new-build coal power projects and helping cut the US power industry's carbon footprint by 33% since 2007 through coal-to-gas switching.

The potential for rapid decarbonization for Kazakhstan is even greater. Replacing the country's coal-fired power plants using combined cycle gas turbine technologies could rapidly deliver around 60% decarbonization – and optimize energy efficiency in the near-term.

Deep decarbonization pathways for gas technologies are mapped out for the coming decades, with utility-scale projects already underway. Carbon capture technology (CCUS) will drive the decarbonization potential of switching coal to combined-cycle gas technology up to 97% or more – while the transition to hydrogen fuel can help achieve zero emission baseload generation.

In addition to their primary function, combined-cycle gas turbine technologies provide additional benefits including heat generation for municipalities. These technologies enable unparalleled reserve for peaking

applications and grid balancing, which will be pivotal to the accelerating additions of intermittent, zero-carbon energy sources to the grid. GE's range of advanced turbines deliver industry-leading efficiency and high operational flexibility, making them the optimal technology for maneuvering capacity.

They are also the ideal choice in terms of project economics, as a result of fuel savings which drive down OPEX throughout the lifecycle, making investor returns more attractive. We welcome the launch of the 2.5GW gas power generation program for the south of Kazakhstan – and GE is actively pursuing participation in the new combined-cycle power plant projects in Almaty, Kyzylorda and Turkestan.

Kazakhstan's decision to explore the potential of nuclear power is another promising step toward zero-carbon baseload generation, and a synergetic pathway as the country leads the world in uranium production and reserves. Nuclear energy provides 10% of global power and has avoided 60 gigatons of CO₂ emissions over the past 50 years. Built on 60 years of experience in nuclear power, GE's *50-400 MW Small Modular Reactor* technology is the pinnacle of simple and safe reactor design, while thanks to its modularity it provides flexibility in sizing.

The *BWRX-300* offers rapid deployment with a 90% volume reduction in plant layout, a 40% reduction in operating costs and reduced outage schedule compared to existing large nuclear plants. The strong fundamentals of lower operating and life-cycle costs means breakthrough *Small Modular Reactor* technology can be another integral element of Kazakhstan's future clean energy mix.

Beyond baseload generation, Kazakhstan is targeting diversification through significant build-out of renewables capacities to reach a 15% share by 2030. Hydropower is well established, but requires upgrade and expansion, while wind and solar power still have enormous untapped potential – with a multitude of sites across the country perfect for onshore wind and solar generation.

Wind technologies have passed the tipping point in both performance and cost, with low competitive levelized cost of electricity and a steady decline in project CAPEX set to continue in the decades ahead. During 2021 GE added gigawatts of zero-carbon generating equipment to our pipeline at landmark global projects. This includes hundreds of our latest on-shore Cypress and record-breaking off-shore *Haliade-X 14MW* wind turbines, as well as our innovative *FLEXINVERTER* solar power stations and equipment for major new hydropower projects.

As the world's largest manufacturer of advanced wind turbines and hydropower equipment with a vast global installed base of more than 400 GW, GE aims to build on our success equipping *Badamsha Wind Farm* in the Aktobe region and our experience in *HPP* modernizations in Central Asia – to help Kazakhstan achieve its ambitious renewable energy targets.

Renewables build-out must be supported by extensive modernization of the grid – using frontier physical and digital technologies that support dispatching and orchestration. Hybrid renewables equipped with advanced battery storage for intraday shifting reduce curtailment, which is even more effective in combined plants that tap into the synergetic nature of wind and solar. Our evolving portfolio of advanced digital solutions can optimize energy planning, operations and market management, enabling *KEGOK* to connect more renewable energy resources, reduce emissions and enhance energy efficiency.

Alongside technology and innovation, public policy development and open, holistic collaboration of all stakeholders will be crucial to success. Over the past decade Kazakhstan had the foresight to strengthen emissions law, and renewables regulation and policy for the first phase of the country's energy transition.

As we move into the next phase, we believe Kazakhstan can benefit greatly from a decisive energy strategy based on proven and highly efficient technologies. Strong execution of the resulting roadmap will be essential, alongside a transition from a capacity-based to a capability-based market design. This will establish a framework to attract foreign and domestic investment for the multi-billion-dollar endeavor of deep decarbonization.

We believe these approaches to decarbonized baseload, balanced renewables and advanced grid architecture will be pivotal to impacting the trajectory of climate change and keeping the 1.5°C pathway open. Backed by 125 years' experience building national power infrastructure and our full lens on power technologies, GE is ready to continue our partnership – to help solidify Kazakhstan's leadership position in energy within the region and deliver meaningful progress toward our common sustainable development goals.



NUCLEAR ENERGY, LOW CARBON ENERGY

by Gerard Fries
General Director
Orano Group Kazakhstan

In the urgency to address climate change, I would like to present the following aspects of nuclear energy:

- *it is a controllable and low carbon energy essential in the fight against global warming;*
- *a sector that provides jobs;*
- *a competitive energy;*
- *an energy friendly to the environment;*
- *an industry which recovers its used materials to produce new fuels, and thus participates in the preservation of natural resources.*

✓ *Nuclear energy is a controllable and low carbon energy essential in the fight against global warming:*

- The ICC experts noted in their report that nuclear will be needed in the energy mix of tomorrow to contain global warming to 1.5 °C;
- Nuclear energy is an asset to achieve the goal of carbon neutrality in 2050: it represents (today) nearly 50% of low carbon electricity in Europe;
- Globally, nuclear is the primary source of low-carbon electricity (40% of low-carbon production; 4 times less eq CO₂ production/kWh than solar, 40 less than gas): nuclear power plants in operation, allowing the equivalent of the CO₂ production of 400 million cars to be avoided each year;
- Many countries are choosing its development:
 - Reactors are thus under construction in China, France, the United Kingdom, the United Arab Emirates, Belarus, Bangladesh and Turkey.
 - Egypt, Poland and Saudi Arabia also want to launch a program.
 - In the long term, other countries are interested. Not to mention the proliferation of projects around small reactors, in particular in the United States and Canada.

✓ *Nuclear power is a sector that provides jobs:*

- Nuclear power represents the 3rd French sector.
 - More than 220,000 employees in trades with high technological content and with jobs in France in our territories.

- 1,500 recruitments at Orano including 500 work-study students in 2020.

- At the European Union level, according to Deloitte, the nuclear sector represents 1.1 million jobs, more than 18 billion euros in the trade balance and 500 billion euros in GDP.

✓ *Nuclear power is a competitive energy*

- Nuclear power allows the French to benefit from the lowest electricity prices in Western Europe. In comparison, German households pay almost twice as much for their electricity (+ 80%): in 2019 a French household pays on average 17 € c / kWh compared to 30 € c / kWh in Germany;
- The price of electricity for French manufacturers 25% cheaper than the European average.

✓ *Nuclear power is an energy friendly to the environment*

- Unlike fossil fuels, nuclear power plants do not emit fine particles, nitrogen dioxide, sulfur dioxide, nitrates and phosphates into the atmosphere;
- The footprint of nuclear power is much less than wind power or solar PV reduced to the installed power: it takes about 50 times less space compared to wind power and almost 100 times less space compared to solar power to produce a kWh with nuclear power.
- ✓ *Nuclear power is an industry which recovers its used materials to produce new fuels, and thus participates in the preservation of natural resources*

- In France, 1 in 10 light bulbs run on recycled nuclear fuel.
- With the recycling of uranium and spent MOX fuels, a 30% saving in raw materials could be achieved.

As part of the *International Council on Mining and Metals (ICMM)*, Orano Group committed to report on its Scope 1 and 2 annually, to accelerate actions on *Scope 3 Emissions*, and to obtain external verifications over our performance and report in alignment with recommendations of the *Task Force on Climate-related Financial Disclosure*.

In Kazakhstan, through its uranium mining joint venture KATCO, Orano is engaged on the decarbonization path and will support the government's efforts, in particular to increase the low carbon energy sources in the country's electricity mix.

There is a lot of science happening at ExxonMobil.

Since 1970, the scientists and engineers at ExxonMobil have contributed to nearly 30,000 patents for innovations in fields across our industry. Along with inventions to produce cleaner fuels, we continue to actively develop technologies such as carbon capture on a mass scale, next-generation biofuels made from algae, and high-efficiency engine lubricants. These are just a few of the technologies we're researching to reduce emissions on a global scale.

ExxonMobil

Energy lives here™



INNOVATIVE TECHNOLOGIES FEED AND SAVE OUR PLANET

by **Sergey Glokke**
General Director
Eurasia Group Kazakhstan

Increasing risks posed by global climate change along with economic and political challenges that come with it, require Kazakhstan's active stance in confronting climate risk by moving to a low-carbon economy first and then going climate-neutral altogether.

Under the *Paris Agreement* of the *United Nations Framework Convention on Climate Change* Kazakhstan has committed to cut greenhouse gas emissions (GHG) by 15% by 2030 (compared to 1990 levels, i.e. from 386.3 down to 328.3 million tons). With that said, Kazakhstan's emissions in 2018 rose to 401.9 million tons, which is 4% above the 1990 levels. In fact, between 2013 and 2018 the greenhouse gas emissions have increased by 27.8%. Considering a constant growth rate of energy generation based on coal technologies (coal-fired plants produce 80% of all electricity), making substantial reductions in emissions becomes even more difficult.

Greenhouse gas emissions from the agriculture economic sector account for 9% of total Kazakhstan emissions. Irrational farming affects not only climate change but also pollutes the environment, depletes our finite land and water resources, causes soil erosion through excessive use of fertilizers and crop protection products.



INNOVATIVE TECHNOLOGIES feed and save the world

The main solution to reduce pollution in agriculture is the use of advanced digital technologies by Kazakhstan farmers.

Modern foreign agricultural machinery is not only highly efficient but also initially manufactured to inflict minimal harm to the environment and save natural resources. For example, John Deere machines are equipped with fuel-efficient and eco-friendly engines Tier III, IV, V with an enhanced exhaust gas cleaning system. The i-Solutions on these machines are responsible for differentiated seeds, fertilizers, and crop protection applications.

GLOBAL CHALLENGES

Necessity to cut greenhouse gas emissions compared to 1990 levels by 2030

by 15%

> 328,3 mio tons



Under the *Paris Agreement* of the *United Nations Framework Convention*

- To stop climate change process
- To reduce greenhouse gas emissions
- Manufacturing and economy decarbonization
- Carbon neutrality by 2060

9%

of total Kazakhstan emissions account for agriculture



- Climate change and disasters
- Environmental pollution
- Natural resource competition
- Irrational use of soil and water
- Soil erosion and compaction
- Pests and diseases
- Excessive use of crop protection products and fertilizers
- Low fleet renewal
- Low-tech

If artificial intelligence, navigation and telematics systems, scouting and intellectual irrigation, documentation, mapping, and agricultural forecasting are added, labor productivity will increase along with reduction of crop protection agents, seeds and fertilizers use (from 20 to 80 percent), and fuel consumption (up to 20%), as well as 7% yield growth. The conclusion: to address food and environmental security as well as the tasks set by the Government for agriculture decarbonization, Kazakhstan's farmers must have access to up-to-date technologies and machinery!

There is a steady tendency worldwide to aim for decarbonization of industry and the economy. In 2023, the European Union will introduce a «carbon tax» that will hinder the export of Kazakhstan's products. This tax will entail changes in technical regulations, standards, and requirements for goods. Thus, Kazakhstan's farmers should begin now to apply solutions and technologies to shape the future.

As one example, John Deere demonstrated its developments in electrification, automatization, and artificial intelligence several years ago. The company presented a compact autonomous robot tractor that had an electric drivetrain, was equipped with tracks,



and articulated steering. Thanks to the electric drive, there are no operating emissions, and noise levels are extremely low.

Cooperation between the Government and private agricultural organizations to aim for reduction of GHG pollution, climate mitigation, and decarbonization should begin with renewal of the country's machinery fleet with the most technological and innovative solutions and application of digitalization and automatization in agriculture. Only by using technologies of the future, can we save our planet!

Escape forward from automation to autonomy!

Data is the fuel that drives today's profitable farming enterprise. John Deere Agricultural Management Solutions (AMS) gather, manage and interpret machine and agronomic data to support better decision making. Decisions that enable you to plan your operations more effectively, optimise machine performance, increase uptime and drive down costs.



COP26 OUTCOMES AND INTERNATIONAL ENERGY AGENCY (IEA) FOLLOW-UP

by Dr. Fatih Birol
Executive Director
International Energy Agency (IEA)

COP26 finished 10 days ago. At the International Energy Agency, we did not rush into a public assessment. We stepped back and looked carefully at the outcomes. Our view is that COP26 achieved a lot. Did it achieve everything? No. But to portray it as a failure is much too strong – and unhelpful. In our view, COP26 has laid the groundwork for a significant increase in momentum for the necessary transformation of the global energy sector.



Overall, there are three areas where COP achieved some important advances that I would like to highlight.

1. Commitments: Countries that account for 90% of the global economy have now made ambitious commitments to reduce emissions to net zero. Commitments and pledges are of course not enough on their own – implementation is key – but commitments are central to the architecture of the *Paris Agreement* and so we should not downplay their significance.

Of the new announcements that were made in Glasgow, I was particularly encouraged by the impressive targets set by **India**. On a multilateral basis, **the Global Methane Pledge** was a major achievement that can make a vital difference on near-term warming.

IEA analysis shows that for the first time, we have a situation where – if all of these commitments are met on time and in full – it would keep the rise in warming to below 2 °C. Our analysis indicates it could limit warming to 1.8 °C, to be precise.

This is not enough – the *Glasgow Climate Pact* makes clear we have to do everything we can to limit warming to 1.5 °C – but it is still a significant step forward in terms of ambition.

2. The second area is **Collaboration**: the IEA has consistently emphasised the importance of international cooperation to the success of the clean energy transition. If we don't have a strong collaborative environment, then we will not achieve our climate goals. Against a difficult international backdrop, I felt that the signals from Glasgow in this regard were promising. Two examples:

- **The US-China Joint Declaration.** This was a major statement about the intention of the two largest emitters to work together and accelerate their actions over the next few years. Cooperation between the world's two biggest economies can provide vital leadership for the world.

- **The Just Energy Transition Partnership with South Africa,** in which a number of major countries and institutions have committed to support South Africa's move away from coal – in a way that not only focuses on emissions but also the social aspects of the energy transition. Very important example of pursuing an orderly transition, and with a financing element to back it up.

- Nonetheless – there are areas where COP26 fell short in terms of collaboration – including support for adaptation efforts and for addressing loss and damage. There is much more work that needs to be done to resolve these issues fairly.

3. A third area where I would like to note progress is on the **Rules**: a major task at COP26 was to agree elements of the Paris rulebook – how to implement different aspects of the *Paris Agreement*. This issue did not grab the headlines, but we have to recognise that COP26 undoubtedly moved things forward on Article 6 and other key elements.

And we also saw new mechanisms being put in place to encourage countries to keep **ratcheting up their commitments** year after year at each successive COP – this can help us close the ambition gap I mentioned just now.

Aside from those three important areas – another one I want to mention today is **Finance**. We have seen some clear efforts at COP26 to improve the situation – but it's still not satisfactory. There is still a lot of work to do here – both in terms of the amount of financing that's needed – and in terms of channelling it to where it can make a real difference. As the IEA has emphasised, finance is the missing link for

accelerating clean energy deployment – especially in developing economies. We need to rapidly find a way to provide an effective catalyst that can really unleash major international investment flows in support of energy transitions.

So – where do we go from here?

Ambition still needs to increase to bring global pledges in line with a 1.5 °C target. But let's also keep in mind that our planet's climate doesn't respond to what people say – it responds to what people do. It responds to specific actions to reduce emissions.

So the key question for follow-up is what countries and companies are going to do differently – not in 2050 or 2060 – but what they're going to do differently now. Implementation is key. We need clear and credible policies, major investments – and more and more clean energy projects and products rolled out around the world to replace the old polluting and emitting infrastructure that is being used today.

That transformation of the global energy system – in a secure, affordable and fair way – remains the focus of the IEA. And – on top of our ongoing work across all fuels and technologies, including efficiency, renewables, EVs and more – I would like to announce four new initiatives that we are launching in support of advancing a rapid and orderly clean energy transition:

1. Net Zero Coal report: Coal was the focus of much of the discussion in Glasgow, but I think we need to be very clear-headed about what comes next. Coal accounts for more emissions globally than any other single source. These emissions will not disappear by themselves – tackling them will require clear strategies, strong policies and international support. It will mean massive investment in sources of low-emissions electricity, and early and sustained attention to the consequences of the transition for coal communities.

That is why I am announcing today a major new IEA report on addressing unabated coal. To be released in June, this report will analyse in detail the practical steps between now and 2030 that can bring down emissions and local air pollution from coal – in line with our *Net Zero by 2050* scenario – while ensuring clean energy transitions are fair and affordable – especially for developing economies.

2. Nuclear for Net Zero report: As the IEA's *Roadmap to Net Zero by 2050* shows, we're going to need to generate a lot more electricity as we move towards net zero. And we need that electricity to come from a range of low-carbon sources that can together ensure reliable and affordable supplies.

Globally, our *Net Zero Roadmap* envisages nuclear power providing a significant amount of that electricity while helping support electricity security – as it does in many economies today.

To ensure a well-informed decisions worldwide, we will produce a major report in May analysing in depth the role of nuclear energy in the pathway to net zero. This will include assessing the advantages it offers in the current energy market context and the years ahead – and the potential role that is emerging for small modular reactors.

3. Methane emissions: The IEA has been a longstanding champion of reductions in methane emissions, and the signing of the *Global Methane Pledge* by more than 100 countries at COP26 was a major step forward. IEA analysis shows that the energy sector – oil, gas and coal operations – must take the lead in bringing these potent emissions down quickly.

As part of our efforts to support the implementation of this pledge, we will be launching a new expanded version of our *Methane Tracker* in February to include emissions from coal – and also to make available estimates for emissions from agriculture and waste. This new, comprehensive, country-by-country, source-by-source Methane Tracker will be part of a larger IEA effort to support the broader adoption of tried-and-tested policies and regulations that have already delivered clear results in cutting methane emissions.

4. Tracking: As I mentioned, governments' ambitions for cutting emissions rose to an unprecedented level at COP26. However, these ambitions have to be backed by action – and the IEA will deepen and expand our work tracking clean energy transitions globally to show whether governments are delivering on their promises – and highlight where action is needed most urgently.

The IEA has been tasked by the United Kingdom's COP26 Presidency with leading global efforts to monitor progress on the *Glasgow Breakthroughs*, which are aimed at driving down the costs of key clean energy technologies. For this, we will track global progress in critical areas – such as power, road transport, steel and hydrogen – to determine whether it is in line with international climate goals.

The IEA is working with countries all around the world to support and accelerate their clean energy transitions as well the implementation of initiatives and pledges announced at COP26. The IEA remains committed to shaping a secure and sustainable energy future for all.

A CALL FROM GLASGOW: THE GLOBAL METHANE PLEDGE

by Simon Blakey
Senior Advisor, Global Gas,
IHS Markit

One of the few concrete successes to emerge from the 26th Conference of the Parties (COP) to the UN Framework Convention on Climate Change (UNFCCC) is the wide adoption of the *Global Methane Pledge*. The Pledge commits participating countries to a collective goal of reducing methane emissions by at least 30% from 2020 levels by 2030. They will also improve the quality of their reporting and measurement and spotlight high-emission sources—"super-emitters."

Ahead of the Glasgow meeting itself, the Pledge, jointly announced by the United States (US) and the European Union (EU) in September 2021, had attracted 31 countries as signatories. By the end of the Glasgow event, 110 countries had joined the Pledge, including half of the 20-member OPEC+ group, Saudi Arabia, Brazil, Indonesia and Nigeria. Although China is not a signatory, a bilateral climate-related agreement between China and the US includes methane reduction.

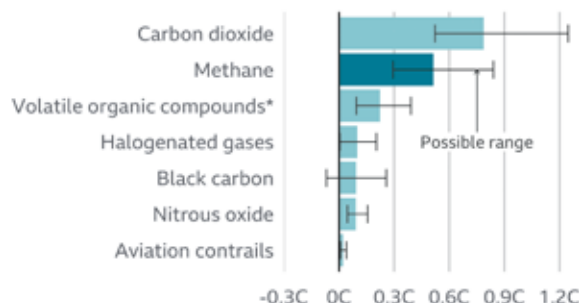
Russia, Kazakhstan, and Azerbaijan, although OPEC+ members, neither signed onto the Pledge nor indicated their intentions to join it in the future. And the major Eurasian gas-producing countries of Turkmenistan and Uzbekistan have also remained silent on the issue so far. Armenia, Estonia, Georgia and Kyrgyzstan (although Latvia and Lithuania are effectively committed through the EU pledge), none of which are major energy producers and exporters, are the only Eurasian countries to commit to the Pledge so far.

From the energy industry's perspective, the *Global Methane Pledge* represents good policy and sensible ambition. There are four reasons for this that can be summarized as *technology*, *scope*, *measurement*, and *engagement*.

- **Technology—Working with the grain of technology and existing industry programs.** In the past five years, there have been many improvements in technologies for detecting, monitoring, preventing, and fixing methane emissions. Satellite monitoring, the adoption of inert gases as drivers of hydraulic and pneumatic valves, the installation of "floating" tank roofs, or the use of electric pumps and engines in areas

Methane is a major contributor to global warming

Contribution to warming in degrees Celsius



Figures are for contributions to 2010-2019 warming relative to 1850-1900
*Volatile organic compounds and carbon monoxide

Source: IPCC Sixth Assessment Report 2021

BBC

such as fracking operations are among the more highly effective technological solutions being widely deployed at oil and natural gas production sites globally.

- The Pledge acknowledges the established energy industry programs that embrace and promote such technologies, notably the *Global Methane Initiative* and the *Climate and Clean Air Coalition*.
- **Scope—Agriculture and waste.** The Pledge makes extensive reference to the main "culprits" in anthropogenic methane emissions—including agriculture and waste management as well as energy—and to the need for policy action across these areas too. Highlighting that "the greatest potential for targeted mitigation by 2030 (is) in the energy sector," the US and EU also draw attention to the steps that they are taking to "accelerate mitigation" in these other sectors.
- **Measurement — A Framework for Improvement.** There is a need for better, more precise data on methane emissions. The Pledge therefore supports the *International Methane Emissions Observatory (IMEO)*, as it brings together new techniques for measuring methane emissions.
- **Engagement—A Route to "buy-in" by Energy Companies.** The *Global Methane Pledge* is a government initiative, and the commitment is collective - it does not commit individual countries to individual targets. Its scope falls within the *Nationally Determined Contributions (NDCs)* codified in the 2015 *Paris Agreement*; it is not additional to them.

It recognizes that countries have “widely varying methane emissions profiles and reduction potential. It also acknowledges that the practical measures that will lead to reduced emissions, notably in the energy sector, are in the hands of the companies that mine coal and produce and distribute oil and natural gas.

Why methane, why now?

Methane is a powerful greenhouse gas, and although reducing methane emissions is no substitute for the reduction of the much longer-lasting carbon dioxide (CO₂), remediation measures for methane in the short term may be more readily available. Importantly, reducing methane emissions can have a short-term impact on the rate of global warming.

The management of methane was notably absent from almost all the NDCs that countries committed to in the *Paris Agreement*, signed in 2016. At the time, the extent of scientific concern about its impact was somewhat limited in the first decade of the 21st century and only began to emerge strongly after 2010. Before 2007, the atmospheric concentration of methane had remained stable (at about 1,770 parts per billion [ppb]). Rapid annual increases in methane emissions since 2007 have altered perceptions; methane concentrations are now above 1,960 ppb, propelling the reduction of methane to the top of the political agenda for the Glasgow COP26.

A smart policy, but nothing succeeds like success

The target in the *Methane Pledge* is achievable. In a crowded field of climate-related policy aspirations—which may or may not be realized—this policy on methane has a realistic chance of making a positive difference to atmospheric chemistry.



One benefit of the *Methane Pledge* is that methane’s stabilization or reduction can have a “front-end” effect on the processes of climate change. This is because the short-lived nature of methane in the atmosphere—just 9–12 years—combined with its potency as a greenhouse gas means that eliminating a “pulse” of methane is relatively quick in terms of its impact compared with eliminating a “pulse” of CO₂. The sponsoring countries therefore claim, perhaps optimistically, that delivering on the *Global Methane Pledge* would reduce warming by at least 0.2 degrees Celsius by midcentury. Recent climate modeling suggests that a 0.1 degree impact may be more realistic. Even this, however, would be a significant near-term win for the environment and policymakers.

How realistic the target is will depend on the precise way that the “30%” in the pledge is specified or interpreted by policymakers.

- *Reducing emissions from today’s estimated annual energy sector emissions* of about 120 million metric tons (MMt) of methane to about 80–85 MMt by 2030 (30%) is almost certainly



feasible, as energy industry efforts spread beyond developed countries to energy activities in the wider world. Some support from changing agricultural practices can be expected.

- *Reducing all anthropogenic* (man-made) *emissions* from today's estimated 350 or 360 MMt by 30% to less than 250 MMt would, however, require deep cuts in agricultural emissions as well as very deep cuts (perhaps two-thirds) in energy emissions. This is not likely to be achievable by the target date of 2030, a mere 8-9 years away.

Both the US and EU have already achieved substantial reductions in methane emissions. European Commission Vice-President Frans Timmermans referred to reductions of almost half from the management of waste and over 65% (almost two-thirds) from fossil fuels over the past three decades (i.e., since the *Kyoto Agreement* reference year of 1990). In the US, for the past 15 years an *Environmental Protection Agency (EPA)* rule is in force requiring companies that emit more than 1,000 metric tons per year to pay a fee. New rules will lower this threshold, widening the scope and increasing the cost of emissions.



Further reduction will, of course, incur costs, depending on the practical measures and regulations imposed. It is too simple to say that “methane has a value, so recovering it is profitable.” The costs of building infrastructure to collect and deliver methane—from farms, remote coal mines or oil wells, for example—are likely to exceed the value of any product recovered. Hence, achieving the *Methane Pledge* may entail costs for companies, and that has already proved controversial within the US oil and gas industry, and globally.

The situation differs greatly around the world, no less so than in Kazakhstan. By 2019 (the most recent year for which a full inventory of emissions is reported), Kazakhstan's methane emissions had contracted by 53% relative to the *Kyoto Agreement* reference year of 1990 but grew by an annual average of 3% since

2014, amounting to 39.9 MMt CO₂e (carbon dioxide equivalent) in 2019, representing 11% of Kazakhstan's total greenhouse gas (GHG) emissions.

In 2019, the agricultural and land use sectors generated 55% of methane emissions, while energy, waste, and industrial processes contributed 34%, 11%, and 0.03%, respectively. And within the energy sector, 52% of methane emissions come from coal production and handling, 31% from oil extraction and transportation, 3% from natural gas production and transportation, while 14% come from industrial energy use (construction, refining, etc.).

Even if Kazakhstan does not join the *Global Methane Pledge*, certainly reducing methane emissions is an important part of reducing the country's overall GHG emissions and achieving its NDC commitments under the *Paris Agreement* by 2030, and potentially, achieving the goal of carbon neutrality by 2060. This is still an important topic for Kazakhstan.

With respect to the hydrocarbon sector, as institutional investors and energy companies are increasingly relying on *ESG (environment, safety, and governance)* metrics and the environmental performance of new and existing hydrocarbon projects to shape their future investment decisions, failure to adopt a cogent regulatory and fiscal approach towards reducing methane emissions will ultimately result in less investment in Kazakhstan's upstream sector and in its energy segment as a whole.

Over time, should aggressive methane reduction targets be adopted elsewhere, Kazakhstan's oil and gas exports could be increasingly seen as less valuable, by virtue of their higher emissions footprint. And for a company like *KazTransGas (KTG)*, that is newly formed as a self-standing company independent from *KazMunayGas (KMG)*, its potential success in an IPO will be inextricably linked to its ability to demonstrate responsible environmental practices, particularly with respect to monitoring and fixing fugitive methane leaks from older natural gas pipelines. Kazakhstan's coal mining is another sizable source of fugitive methane emissions.

The *Global Methane Pledge* sets a specific and measurable target. Properly specified it is achievable. The recent rise in methane concentrations means it is highly relevant, and because of the short-lived nature of the gas, it can be effective in a short time frame. Therefore—specific, measurable, achievable, relevant, and time-limited - terms that more often appear in business planning than in the political sphere - it does appear that this Pledge, emerging from the Glasgow spotlight, is a smart policy, and one that Kazakhstan should embrace.

AFTER GLASGOW COP26, WHAT'S NEXT?

by Ambassador Andre Carstens
Ambassador of the Netherlands to Kazakhstan

The following article focuses on the objectives of the COP26 Climate Change Summit in Glasgow from the perspective of the European Union with additional commentary on objectives pursued by the Netherlands.

The European Union focused on three objectives in Glasgow:

- to generate **commitments to cut emissions** during this decade, to limit global warming to 1.5 degrees;
- to collect 100 billion dollars per year for **developing countries** and
- to get agreement on the **Paris Rulebook**.

This focus was productive and led to good results:

- **Global warming** - before COP26, the planet was moving towards a global warming of 2.7° degrees. During the Conference, this figure could be adjusted to between 1.8° and 2.4° degrees. According to Glasgow, the signatories now must revisit their commitments by the end of 2022 to put us further on track for 1.5° degrees, which is nothing more than we need to do for our children and grandchildren.
- **Climate finance** – was made good progress towards the goal of 100 billion dollars per year to support climate efforts of developing countries, which has to be followed by a long-term plan beyond 2025. Blending mechanisms, where public finance is used to generate private finance for climate efforts, are showing promising results. I believe that Kazakhstan should apply this model to catalyze its own efforts in a similar way.
- **Paris Agreement Rulebook** - technical negotiations on this rulebook were completed. The Rulebook sets necessary standards for reporting on emission reduction and other commitments. Also, the Rulebook sets rules for international carbon emission trading.

All in all, there was a clear signal that we have to aim for 1.5° degrees. Also, the Parties agreed to avert and **mitigate the effects of climate change**. Therefore, the Netherlands hosted the *Climate Adaptation Summit* early this year and played a supportive role in Glasgow, where Prime Minister Mamin met with Netherlands Prime Minister Mark Rutte.

The next step is the global *Water Conference* in March 2023 in New York, which the Netherlands will co-host together with Tajikistan. Due to climate change, the universal right of access to clean water (SDG 6) is increasingly under pressure. Living in a river delta, the Netherlands knows water as a source of both life and disaster. Our close connection with water has made us smarter in water management.

There is no time to lose. The Glasgow promises must be implemented **NOW**, we must intensify our cooperation and aim higher. Kazakhstan is no exception. Why did Kazakhstan delay approval of the low carbon doctrine and the *updated Nationally Determined Contributions* (the NDC's)? Given its importance, it appears a missed opportunity. When will approval of the NDC's be expected?

A few words should be added about **coal**. Coal was very much on the table in Glasgow, until the very end in the final statement: *phasing out or phasing down*. Coal is still important for Kazakhstan, in some oblasts more important than others. It makes sense to develop a plan, a roadmap, to specify in which oblast and which sector alternative energy sources, such as gas (as a transition fuel), should be available - how much and when. We have plenty of knowledge and experience to support this transition.

Another observation should be made concerning **taxes**, on which we have a more general concern. Investment in Kazakhstan, in particular from the Netherlands, has been high but is under pressure. Foreign investors observe that the government tends to target them for new or expanded taxation whenever they need budget. This is difficult to accept, even counterproductive, as it is driving away potential investors that Kazakhstan wishes to attract.

To conclude, a positive observation. Kazakhstan might do well to consider joining the **Coalition of Finance Ministers for Climate Action**, in which policymakers and experts from over 65 countries are joining forces to secure transition towards low-carbon development by sharing best practices in procurement, fiscal planning, carbon pricing measures, and by mobilizing private sources of climate finance.

Participation in this Coalition can support efforts to fine tune climate policy decisions that may be difficult but can be reached in collaboration with other countries facing the same challenges.

THE GEOPOLITICS OF ENERGY

by Ambassador Marco Alberti
Ambassador of Italy to Kazakhstan

Kazakhstan was one of the first countries to ratify the *Paris Agreement*. The government has fixed ambitious targets, including a 15% reduction of greenhouse gas emissions by 2030; 15% of renewables in the energy mix by 2030 and announced the carbon neutrality by 2060. Kazakhstan wants to become a Central Asian hub for green growth. Italy appreciates your commitments and is ready to collaborate to tackle the dual challenges that we are facing today: scaling-up climate action and managing the potential disruptions following the energy transition.

Net-zero society requires managing three transitions at the same time: *digital*, *ecological* and *geopolitical*. Digitalization boosts the green race. Thanks to new technologies, from 2010 to 2019 the cost of generating electricity from onshore wind fell by 46% and that of solar PV by 81%. In turn, digital and ecological transformations reshape geopolitics; change the concepts of power and the relations among states; define a new economic convergence of developed/developing countries.

AMBITION MECHANISM IN THE PARIS AGREEMENT



In the next few years, we will have two combined geopolitics of energy: the *traditional* one and the *transitional* one.

- *On one side*, dependence on hydrocarbons will probably rise before falling. It has been calculated that if the world reached net zero by 2050, it would still be using 50% as much natural gas as today, and about ¼ as much oil.
- *On the other side*, while decarbonizing the power supply, states electrify their energy systems. By 2026 global renewable electricity capacity is forecast to rise more than 60% from 2020 levels to over 4 800 GW – equivalent to the current total global power capacity of fossil fuels and nuclear combined. Renewables are set to account for 95% of the increase in global power capacity through 2026, with solar PV more than half.



Do renewable energies bring peace? Probably not, but they bring investments. Investors know that a sick planet is a financial risk. The *International Energy Agency (IEA)* estimates 367 BLN US\$ investments in renewables in 2021, equivalent to 70% of the new investments in installed capacity. Yesterday, the *Abu Dhabi Development Company* announced a \$6 billion US\$ investment in Kazakhstan, mostly in renewable energies. *ENI* is planning to celebrate the commissioning of its second wind farm in Kazakhstan, in the Aktobe Region, by the end of the year.

As mentioned, all this results in two combined geopolitics of energy: the *traditional* one and the *transitional* one. The former is well known. The latter entails three main shifts:

1. Shift from commodity to technology

We are moving from a commodity-based energy system to a technology-based energy system. Geopolitical confrontation (and cooperation) will depend on control over technology more than on control over commodity. The power to set technological standards will grant competitive advantage and - therefore - relevant geopolitical influence over others.

2. Shift from physical to digital energy security

Going green means going digital and going digital means going cyber. Three consequences:

- *Need of massive digitalization of grids*; the more renewable energy we install, the more digitized grids we need; grids enable de-carbonization and enhance geopolitical influence; for each dollar invested in green energy generation, we should invest one in digitized grids;

- *Growing importance of flexibility*; energy security, and its geopolitical relevance, will depend on the control over infrastructures and the regulatory reforms that make energy markets integrated and competitive. Companies like KEGOC can play a key-role in the re-configuration of the energy system.

Italian companies can partner with KEGOC. Enel is the 2nd largest utility worldwide, with 49 GW of renewable energy installed and 2.2 million km of grids. Italy and its companies, both multinationals and SMEs, offer top-notch technologies, as well as flexible and innovative solutions to transform the electricity grids.

- *Cyberization of energy geopolitics*; smart grids are based on cloud, I.o.T. and big data; they are strategic, but also extremely vulnerable to cyber-attacks. Governments should protect them, by building secure-by-design networks. Investing in cyber-security of grids prevent:
 - the de-carbonization process from slowing down
 - the governments from facing a severe shortage of energy cyber workers

3. *Shift from globalization to regionalization*

A decarbonized world will rely more on electricity. Compared to hydrocarbons, electricity is harder and more expensive to transport over long distances. We are going towards “regional electrified grid communities”. Central Asia electricity transmission systems are inter-connected, but the exchange of power in the Region is below the available interconnection capacity. According to the WB, this is due to

the lack of regional network management and harmonization; limited system synchronization; absence of coordination in power generation, economic dispatch, and planning. Central Asia electricity connectivity could bring relevant economic growth to the states and reinforce the regional leadership of Kazakhstan.

Three final points in conclusion:

1. *The ecological transition will create collaboration*, as no country; no Region; no multinational, can manage it by itself. *Notwithstanding, it will also bring confrontation and geopolitical risks*. In response, governments should link low-carbon technology not exclusively with environmental issues, but also with foreign and security policy, as they did with oil and gas;
2. *Cop 26 sent a clear message: visions on ecological transition are different*; empowering the early winners of the green energy transition is good, but not enough; we should also pay attention and put the focus on the potential disruption resulting from falling fossil-fuel demand, and from the economic and security risks deriving from possible destabilization.
3. *Besides cumulative market opportunity and a concrete chance to accelerate the post-pandemic recovery, the transition also comes with high costs that can imperil growth and development*. There is no reason to slow down the transition; to the contrary, we should join forces to boost it. No ecological transition is possible without the vision of the public sector and the resources of the private one. Governments and companies, indeed, share the responsibility to make the transition fast, but also just, avoiding geopolitical turmoil and fractures in domestic societies.



KAZAKHSTAN – CLIMATE CHANGE, GROWTH, AND FISCAL CHALLENGES

by Nicolas Blancher
Eurasia Division Chief
International Monetary Fund (IMF)

The following article will briefly summarize how the IMF assesses (i) future economic growth prospects, (ii) challenges from climate change, and (iii) reform priorities, with particular focus on the role of the state and fiscal policy.

1. Long term growth prospects and challenges

Kazakhstan's economy is recovering from the COVID crisis. We expect growth to converge to its potential in the MT (about 4 percent for the non-oil sector). Policy frameworks are being strengthened, which will help make growth more resilient and sustainable:

- **Monetary and exchange rate policy.** Continued progress is underway in the transition to full-fledged inflation targeting, and greater exchange rate flexibility has served Kazakhstan well.
- **Financial sector policy.** Efforts towards a more risk-based supervisory framework will help promote sound risk management practices and prevent severe banking sector distress.
- **Fiscal policy framework.** Gradual fiscal consolidation post-COVID and reforms to change fiscal rules should help preserve buffers and allow Kazakhstan to remain a net creditor.

However, in the long term, economic growth in Kazakhstan will also need new drivers. In a low-carbon global economy, the current growth model will reach its limits and will not create enough jobs for the young population. Economic diversification will be crucial since a model based on the production and exports of hydrocarbons will not be sustainable. In addition, the market transition is unfinished: the state footprint in the economy, including through state-owned enterprises (SOE) and subsidization programs, is very large, hampering private sector development.

2. Climate change raises numerous challenges

There are three main categories of climate-related challenges in Kazakhstan:

- **Adaptation.** Temperatures and the frequency of heatwaves, droughts, and mudflows are projected to rise significantly.



- **Mitigation.** Kazakhstan is a large CO2 emitter - 26th position in global ranking for greenhouse gas emissions, and in the top 20 for per-capita emissions. Energy generation is 50 percent from coal.
- **Transition.** As a fossil fuel-based economy, the transition to a low-carbon global economy raises major long-term challenges.

These changes will impact the economy through multiple channels: (i) **long-term growth** (e.g., effect on agriculture and energy production); (ii) **fiscal revenues** (e.g., losses from reduced oil prices and gains from mitigation through carbon taxation); (iii) **fiscal expenditures** (e.g., public investment for mitigation and new energy sources, strengthened social safety nets); (iv) **financial sector stability and development** (e.g., given the impact of increased natural disasters); and (v) **external accounts** (e.g., long-term export trends and diversification).

3. Reform priorities to prepare for these challenges and diversify the economy

First, Kazakhstan's economy benefits from some strengths: it is a high-income country, and the state is now a net creditor. Some sectors have high potential – such as agriculture and the agro-industrial complex). And the business environment is improving, even though more is needed to attract more substantial inflows of foreign investment.

Yet, new sources of long-term growth and job creation will depend critically on the pace of further reforms to make the economy more market-based – two aspects in particular: (i) **changing the role of the state to support PSD**; and (ii) **investing well in the long term**, especially in infrastructure and in people, to manage the climate transition.

1. Transformation of the public sector. A more diversified, private-sector-led growth model requires a deep transformation of the public sector. Priorities include:

- **SOE reforms.** The rationale for SOE's existence should be reevaluated, and SOE risk management and governance enhanced. The authorities' plan to resume privatizations post-COVID is welcome, as is the recent creation of an independent competition agency, which should help reduce barriers to market access, trade, and investment.
- **Governance and anti-corruption reforms** need to continue. They include the ***National Anti-Corruption Strategy***, the digitalization of tax and custom administration, the new asset declaration regime and public procurement law, and better aligning the AML/CFT regime with international standards. More broadly, public sector transparency is a key priority, including for international investors, and the IMF is supporting the authorities in this area.

2. The state will have a fundamental role in investing large public resources well:

- **The authorities are committed to net zero emissions by 2060.** To meet these objectives, infrastructure and social spending needs will be large. In many rural areas, coal is the only energy source for heating and electricity, and a key source of jobs. Therefore, addressing climate change will require modernized energy infrastructure, strong social safety nets, and time and incentives for the private sector to move away from polluting energy sources.
- **More broadly, climate change brings additional challenges and opportunities for fiscal policy.** Raising the price of carbon by reducing energy subsidies would provide resources to finance a just transition while aligning domestic incentives. However, proceeding gradually will be essential to ensure that the transition is economically and socially sustainable.

Further focus on these issues:

- **The price of carbon emissions in Kazakhstan is low** - about US\$1 per ton of CO₂, as a result of pre-tax energy subsidies and low carbon taxation.

- **Potential gains from mitigation measures are very significant:** for a carbon tax of US\$25, they are estimated at about 6 percent of GDP of increased public revenues. These gains would help protect the financial wealth of the country, while creating space for much needed infrastructure, economic diversification and greening, and helping to engineer a gradual adjustment without endangering fiscal sustainability.
- **However, a broader strategy to mobilize public revenues in the LT is also needed.** The gains from carbon taxation will decline over time as the economy moves away from coal. Therefore, an upgraded tax system will also be necessary. Non-oil tax revenues in Kazakhstan are low by international standards. The authorities could consider measures to broaden the tax base (e.g., streamlining exemptions), raise tax rates (e.g., VAT rates, which are low), and introduce a progressive income tax.
- **Finally, cross-countries experience shows that domestic energy price increases cannot be rushed.** As already noted, a gradual approach is needed to leave flexibility for the economy and society to adjust, and to create infrastructure for a green transition and economic diversification. The transition will have to be well explained, its modalities depoliticized as much as possible (e.g., through automatic pricing formulas), and be based on strong fiscal transparency to demonstrate that funds from higher taxation are spent appropriately.

In Conclusion

These are major challenges and reform priorities – following positive announcements from the authorities on climate change, the real test will be in actual implementation, and adopting a comprehensive and gradual approach to key reforms, including fiscal, based on early policy planning. The IMF supports the authorities in this effort, in close coordination with other international partners.



COP26 COMMITMENTS: TAX POLICY CHALLENGES AND OPPORTUNITIES FOR KAZAKHSTAN

by **Pascal Saint-Amans**

**Director, Centre for Tax Policy and Administration
OECD**

Kazakhstan is a close partner of the OECD in the field of taxation

Kazakhstan and the Organisation for Economic Co-operation and Development (OECD) have been collaborating in the area of taxation for almost a decade. Kazakhstan is a member of the two bodies established by the OECD to deal with international taxation, namely the *OECD/G20 Inclusive Framework on BEPS* bringing together 141 countries and jurisdictions, and the *Global Forum on Transparency and Exchange of Information for Tax Purposes*, whose membership is comprised of 163 countries and jurisdictions – and Kazakhstan is involved on an equal footing in both projects.

As a member of both initiatives, Kazakhstan is making significant progress in implementing the international standards in taxation domestically as well as contributing towards the development of new international standards. Kazakhstan is also benefiting from the technical assistance and capacity building programs provided by the OECD including the joint OECD-UNDP programme – *Tax Inspectors Without Borders (TWIB)*, which was launched in 2020. In addition, Kazakhstan has worked with the OECD on carrying out a *Tax Policy Review* of the current taxation framework with the final report issued in September 2020.

What are the challenges that Kazakhstan is facing?

The COP26 Commitments present clear challenges but also opportunities to Kazakhstan.

Kazakhstan is currently heavily reliant on the Oil & Gas (O&G) sector in both tax revenues and exports. This is unsustainable in light of the global commitment for a reduction of greenhouse gas emissions. Diversification of the tax base is therefore increasingly urgent, through a combination of tax and non-tax policy changes.



This need for reform presents an opportunity for Kazakhstan to transform its economy as well as its tax revenue structure. There are also significant implications for other exports, heavily reliant on energy inputs from fossil fuels (processing of minerals, such as steel and similar products).

In particular, the EU proposal for a carbon border adjustment mechanism creates an incentive to advance with carbon pricing in Kazakhstan, particularly given that the EU is Kazakhstan's main export destination. For this, Kazakhstan can build on its existing taxation framework which already includes implicit carbon pricing through fuel excises, as well as explicit pricing with its *Emissions Trading Scheme (ETS)* and strengthen it by adding a carbon tax or increasing coverage and stringency in the ETS.

What are the key issues Kazakhstan will have to address in the coming months and coming years?

As the *OECD Tax Policy Review* report explains, Kazakhstan currently relies significantly on revenues from the natural resource sector and in particular O&G to balance its budget. The non-O&G tax revenues are low, undiversified and volatile by international standards. Despite the nominal increase of tax revenues over the past decade, taxes as a share of GDP in Kazakhstan have decreased and remain low by international standards.¹

In fact, it needs to be acknowledged that Kazakhstan is running a significant non-oil deficit.² The analysis of the non-oil deficit in our report shows that it could range from 4% to 7% of GDP by 2025. The COP26 challenges further amplify this issue and this is an important point that I want to emphasise, because

¹Kazakhstan's tax-to-GDP ratio was 16.7% in 2019, below the Asia and Pacific (24) average of 21.0% by 4.4 percentage points. It was also below the OECD average (33.8%) by 17.2 percentage points.

²The general idea of a non-oil deficit is to disregard oil revenues from the budget to provide a more realistic measure of the budget deficit in the absence of oil revenues.

there is an interaction with oil prices – when countries around the world start lowering their demand and supply remains fixed, prices of fossil fuels will decline over time; so it is really urgent that the current oil revenues be put aside for a rainy day in the future.

Kazakhstan should therefore strengthen the design of its tax system and start raising more tax revenues to support its medium-term goals and longer-term sustainability. The financing needs of the country could be met by gradually increasing some non-resource taxes that have considerable potential for generating additional revenues.

Diversifying the economy away from a too narrow focus on the fossil fuel sector will also diversify the tax base and will make the country more resilient. As a general recommendation, our report suggests that Kazakhstan should not focus on increasing tax rates on the currently narrow tax base in the case of most taxes; rather, the priority should be broadening the tax base and increasing levels of tax compliance. That is the best strategy to also stimulate broader economic activity (beyond the fossil fuel sector).



Financing needs could be met by gradually increasing some taxes that have potential for generating more revenue and are not linked to the extraction of natural resources. Additional tax revenues could be raised from personal income tax (PIT), social security contributions and property tax with a modest increase in taxes on goods and services. In particular:

- Kazakhstan could consider transitioning to a progressive PIT system to support equity and raise revenues over the medium-term but not before certain preconditions are addressed including the implementation of the universal tax declaration.



- The taxation of personal capital income needs reform. Personal capital income, such as dividends and capital gains, are mostly exempt from tax in Kazakhstan. Where tax does apply, the rates are low. Some of the exemptions on personal capital income could be removed and a single low rate or a progressive rate could be applied across all forms of personal capital income (either by taxing capital income jointly with labour income or by applying a separate progressive rate schedule on personal capital income).

Kazakhstan should continue to implement its current reform of the social security contributions system to support the underperforming health and welfare systems while also considering broadening the base for social security contributions.

Corporate income tax revenues are generated by a small number of companies and sectors and there are many corporate tax incentives. Scope exists to broaden the *corporate income tax (CIT)* base while maintaining the 20% CIT rate at its current level. Kazakhstan offers many generous tax incentives to companies that come at a significant tax revenue cost and a comprehensive review of the current incentives including their effectiveness is recommended.

The number of special tax regimes for Small and Medium Enterprises (SMEs) could be reduced. In addition to reducing the number of special tax regimes for SMEs, the design of some regimes could be strengthened.

Opportunities still remain also in the area of *Value Added Tax (VAT)*, where the transactions involving cross-border sales of goods and services via digital platforms especially present opportunities for Kazakhstan. These transactions are already partially addressed in the area of services, but further tax base broadening is feasible in respect of the application of VAT rules on the remote sales of goods into Kazakhstan.

There are also opportunities in the form of revenue potential and positive impact on lifestyle changes that can be achieved through the introduction of specific taxes on the consumption of tobacco, alcohol, sugar-sweetened beverages and other selected products, which may also induce people to live healthier lifestyles.

Kazakhstan is part of the recent international tax deal

Kazakhstan has been working with other countries to improve the way multinational companies will be taxed through the BEPS project and the new international deal concluded on 8 October 2021. As a part of this agreement, 137 countries and jurisdictions have agreed a new set of rules, which will allow market jurisdictions like Kazakhstan to get a part/portion of the rent of the largest multinational companies.



And there is also an agreement that there will now be a minimum level of taxation of at least 15% effective tax rate, which together with the reallocation of taxing rights is likely to bring significant potential tax revenue to Kazakhstan. These new rules also present an opportunity for Kazakhstan to review and rethink the approach to granting CIT tax incentives, as the tax revenue that Kazakhstan may give up by granting these tax incentives may instead be taxed in other jurisdictions, which could render the tax incentives ineffective in some cases.



Naturally, for Kazakhstan to reap those potential additional tax revenues as well as deriving the indirect benefits of reduced tax avoidance practices, Kazakhstan will need to take further legislative action to implement these new standards into their domestic law.

Ensuring that Kazakhstan properly uses the information it can get from tax havens but also from other partners is also a way to improve tax compliance and this is where I would like to highlight the importance of the implementation of *Automatic Exchange of Information*, which presents a significant tool for Kazakhstan to reinforce tax compliance.

OECD experts have already engaged with Kazakhstan on a tax policy design, and further collaboration may be useful on that front.

Further alignment and implementation of OECD standards should be a top priority

As highlighted by the *OECD Tax Policy Review* report, there is also the very important dimension of improving tax compliance.

The initial findings of the joint *OECD-UNDP TIWB* programme indicate that there are significant revenue losses resulting from *Base Erosion and Profit Shifting (BEPS)* practices in Kazakhstan, which is also the result of legislative and administrative gaps, where Kazakhstan did not fully implement international standards and BEPS recommendations, in particular in the area of transfer pricing.

The existing gaps and divergences between the *Transfer Pricing Framework* of Kazakhstan and the international standard represented by the *OECD Transfer Pricing Guidelines* have dual effect.

On one side, there is a significant risk of double taxation, which creates uncertainty for investors and also unpredictability of administrative outcomes, while the effect of double taxation also presents the barrier to some type of investments.

On the other side, evidence collected during the *TIWB* programme also leads to understanding that these gaps and divergences are being exploited by some multinational enterprises for the purposes of base erosion and profit shifting out of Kazakhstan and revenue losses already identified are significant and require immediate action and administrative attention.

Alignment to the OECD standard on transfer pricing thus clearly presents an important and strategic step that can contribute towards the reduction of the magnitude of those revenue losses and increase investment attractiveness by ensuring tax certainty and predictability. Such alignment with international standards will need to be accompanied by further investment into administrative capacities to ensure consistent application of the international standards and the predictability of outcomes and tax certainty by implementing the best practices in tax administration.

Kazakhstan can engage in the international dialogue on Carbon Pricing

Returning to the climate change agenda and a big challenge ahead on which the OECD will be very happy to work with Kazakhstan, the price of carbon needs examination.

Kazakhstan produces oil and gas and Kazakhstan also has production in steel and industries that will be affected by most of the import jurisdictions – such as the EU, and by other countries when they put a price tag on carbon emissions through ETS schemes or carbon taxation. The European Union's proposal on the carbon border adjustment would likely impact the exports of Kazakhstan to the EU, but this would also more massively impact the overall investment in energy production with the decarbonisation. This needs to be anticipated – there is no easy answer.

There may also be a need to consider the role of environmental taxes and carbon taxes for Kazakhstan. These taxes will raise revenues that can be used in different ways. The revenues can be used to assist industries with their reconversion and to support the strategic objectives of diversifying the economy.

The OECD is in the process of establishing an *Inclusive Framework on Carbon Pricing* to take into account both explicit and implicit carbon pricing. That will require a strategic reflection with countries like Kazakhstan on how to move forward on this challenge and how to think through the consequences. While the policy recommendations outlined above will contribute towards diversification and sustainability of tax revenues of Kazakhstan, to address the issue of carbon pricing Kazakhstan should be actively involved in that conversation. *The Inclusive Framework on Carbon Pricing*, if established, would aim to structure the international dialogue for the next 10 years or longer.

The OECD appreciates the opportunity to co-operate with Kazakhstan as well as providing support in redesigning the tax system and transitioning toward a more inclusive and sustainable tax system, which will contribute towards diversification of the economy, broadening the tax base, improving tax administration as well as the tax compliance, and the next challenge: coping with the fact that carbon will be priced in the future.



KAZAKHSTAN'S MULTIPLE SHADES OF GREEN

The EBRD view on Kazakhstan's Green Agenda, Decarbonisation and Private Businesses

by Huseyin Ozhan

Kazakhstan Country Director

European Bank for Reconstruction and Development (EBRD)

Following the COP26 conference in Glasgow, there are very few doubters that the only option for our planet is to go green. Even major polluters such as China, Russia and the US are committing to key goals and principles of the Paris Agreement. Indeed, urgent action is required from every single country to keep global warming at bay and limit the temperature increase to 1.5°C.

Kazakhstan, Central Asia's largest economy, is taking this matter seriously. Not least because it heavily relies on coal, which is responsible for around 70 per cent of power generation. There are many reasons for this dependence, yet the country is firmly committed to getting things right, and many pertinent processes are already underway. Kazakhstan was one of the first countries in the world to set an objective of achieving carbon neutrality by 2060. At the Glasgow conference, Prime Minister Askar Mamin reiterated immediate decarbonisation measures: Kazakhstan is committed to reducing CO2 emissions by 15 per cent before 2030 and achieving complete carbon neutrality by 2060.

One needs reliable and trusted partners to accomplish such ambitious objectives. Kazakhstan didn't have to look beyond the European Bank for Reconstruction and Development (EBRD), which has been one of the major investors in the country since 1992. In line with its own target of making half of the Bank's annual investment green by 2025 and compliant with the goals of the Paris Agreement by early 2023, the EBRD was quick to offer a helping hand to one of its most essential Countries of Operations.

In March 2021, the Ministry of Energy and the EBRD signed a Memorandum of Understanding on the development of the *Low Carbon Pathway* for the energy sector. It will serve as a roadmap for the sector's gradual and sustainable transition to renewables, which will require a substantial volume of private investments. That is why Kazakhstan is actively engaging international expertise to establish the regulatory base required for developing large-scale renewable energy projects with global sponsors.

In 2018-2020, the government of Kazakhstan successfully auctioned more than 1,200 MW of renewable energy capacity, and the EBRD is contented to observe a steadily growing number of successful local bidders. At the same time, it is



imperative to continue improving relevant legislation to attract even more international investors, which will bring new technologies and competition; thus, helping to bring down tariffs. The EBRD is looking forward to the first auctions for flexible capacities, which are essential to ensure the system's sustainability under the growing share of renewables in the energy mix.

The EBRD is working with consultants on organising auctions for up to 250 MW of wind capacity, which will take place in 2022. In addition to selecting suitable sites, wind measurement, and preparation of documentation, the Bank is helping the Ministry of Energy of Kazakhstan identify critical areas of improvements in legislation to attract more international and local developers.

The EBRD has not only been advising Kazakhstan on the development of its green agenda, and it has financially supported almost 800 MW of the renewable capacity installed in the country. Under its *Kazakhstan Renewables Framework*, originally approved in 2016 and extended in 2019, the Bank channelled over US\$575 million to support renewable energy and grid enhancement projects in the country. The Bank has also mobilised around US\$110 million from the *Green Climate Fund*.

It is quite natural to link renewable energy with decarbonisation, but there are many other avenues to pursue a green agenda in Kazakhstan. Addressing climate change and environmental degradation on the municipal level is equally urgent. Cities worldwide are the source of at least three-quarters of emissions and this is also true of cities in Kazakhstan. Obsolete urban infrastructure, which is suffering from decades of underinvestment, is often degrading the quality of life of people, increasing greenhouse gas emissions, and preventing communities from adapting to climate change. In 2016 the EBRD introduced its *Green Cities* programme in the country and proved to be very popular with municipalities across the country. Almaty, Shymkent, Semey and Oskemen have joined the programme to date.

EBRD Green Cities offers tangible support to help cities address their environmental issues and improve the quality of life of their residents. All participating cities embark on a trigger project to improve their local environment then, with the Bank's help, work on a *Green City Action Plan (GCAP)* to create a tailor-made list of further environmental investments and policy actions most suitable to address their environmental challenges.

Trigger projects can range from solid waste management to the introduction of municipal electric transport. For example, in the country's largest municipality Almaty, the focal point will be on coal-fired power plants, which are responsible for supplying heat to the inhabitants and equally accountable for the dire ecological situation in the city. The EBRD has already engaged consultants looking at various environmentally friendly solutions in the context of Almaty's GCAP.

Generally speaking, the EBRD is taking a broader view on Kazakhstan's urban and environmental infrastructure because its upgrades help reduce *greenhouse gas (GHG)* emissions, increase municipal companies' operational efficiency, and help them cut water, heat, and energy consumption. Over the last decade, our Bank invested more than US\$480 million to support 29 essential infrastructure upgrade projects in Kazakhstan. More than 2.8 million people in 11 municipalities received access to modern water, wastewater, transport, heating and street lighting services.

Currently, the EBRD is developing projects for the construction and modernisation of wastewater treatment plants in six cities. It will contribute to the initiative by the Government of Kazakhstan to modernise water treatment facilities in 53 cities around the country. It is expected that these projects will introduce first *Design-Build-Operate and Maintain (DBOM)* contracts to secure tailored technical solutions, quality performance and skills transfer.

Greening of Kazakhstan is impossible without modernising of public transport. We are talking about replacing old diesel buses and introducing new trolley buses, trams, electric buses, and light rail infrastructure. These solutions should help address the growing concerns of Kazakhstan's population over transport emissions, congestion and growing passenger flow from new residential areas.

It would be wrong to suggest that decarbonisation and green innovation are only relevant to the public sector. Many environmentally-conscious private

companies in the country are willing to implement energy-efficient and low emission technologies and reduce their carbon footprint.

The EBRD developed the *High-Impact Programme (HIP)* for corporate sector clients, which emit over 20,000 tonnes of CO₂ annually and operate in manufacturing, agribusiness, metal and other sectors. The HIP will help companies conduct relevant due diligence, develop decarbonisation roadmaps and implement them. The EBRD will offer a blend of loan and grant funding to support the initiative.



In 2019, in order to address green transition on a grassroot level, the Bank launched the *Green Economy Financing Facility (GEFF)* in Kazakhstan. A US\$30 million framework is providing finance for households and small private sector companies investing in green technology solutions. Thousands of households and domestic small and medium-sized enterprises (SMEs), across the country, including small villages and remote rural areas, will benefit from loans for investment in climate adaptation technologies and services.

These may include solutions such as thermal insulation, photovoltaic solar panels, geothermal heat pumps and water-efficient irrigation systems. The GEFF is currently implemented through two *partner-financial institutions (PFI)*: *Bank Centre Credit and Microfinance Company KMF*. A third PFI is expected to join the framework by the end of 2021.

The EBRD would like to commend the authorities of Kazakhstan for their green ambitions and commitment to supporting decarbonisation in the country. With this level of political support, our Bank will be able to pursue various green initiatives, support private investment and initiative, offer procurement opportunities for suppliers of equipment and technologies, and ultimately make Kazakhstan an even better place to live.

KAZAKHSTAN'S DECARBONIZATION STRATEGY – VIEW ON THE NEXT STEPS

by Erlan Dosymbekov
Managing Partner
EY Kazakhstan

The following article briefly describes EY's vision of decarbonization policy and measures for its implementation in Kazakhstan.

Key COP26 issues essential for Kazakhstan

There is currently a stable trend towards decarbonization of the world's major economies. The total number of countries that have announced the objective of carbon neutrality is growing annually. This is supported by the COP26, or the 26th Conference of the Parties to the Paris Agreement, also known as the U.N. Climate Change Summit. Based on its results, the main document – the *Glasgow Climate Pact* – has been adopted, whose key provisions must be implemented in Kazakhstan.

We would like to emphasize the following crucial items in the *Climate Pact*:

- **Plans to “phase down” coal power generation and to “phase out” fossil fuel subsidies.** Coal power generation is the basis of Kazakhstan's energy balance, and, for this reason, there should be a precise plan for its phasing out, and this should be detailed in *Kazakhstan's Doctrine of Carbon Neutrality*;
- **Annual revision of Nationally Determined Contributions (NDC).** From now on, Kazakhstan will need to demonstrate real progress each year towards reduction of emissions by “minus 15% at the end of 2030,” thereby maintaining a balance between ambition and reality. However, the NDC and NDC road map have not yet been adopted in Kazakhstan;
- **Increase in total “climate financing” in the form of grants and funds mobilized by developed countries (a possible annual investment of up to USD 100 billion till 2025).** For Kazakhstan to keep up with this process, it will be essential to study the framework of international projects for reducing emissions, and prepare and implement an appropriate legal framework. In other words, Kazakhstan must do everything required to become eligible for such financing. This is particularly relevant following adoption of the *Rules for International Cooperation* in the context of Article 6 of the Paris Agreement on *Market and Non-Market Mechanisms of Carbon Markets*.

Kazakhstan must determine and announce a targeted energy balance for the 2030s and 2040s

Draft roadmaps to implement NDC and the *Doctrine of Low-Carbon Development* can become the basis for precise determination of targeted indicators of this country's energy balance for the end of the 2030s and 2040s. These measures will serve as an intermediary benchmark for reaching carbon neutrality by 2060.

In the context of “the phasing out of coal,” companies could introduce the best available technologies for minimizing the pollutant emissions of their production assets. This will provide for the gradual adoption of *carbon capture, utilization and storage (CCUS)* technologies by power and combined heat-and-power generation plants and of methane-capture technologies by mines and quarries.

At the same time a decision is needed about the type of power generation that will be the main one in Kazakhstan's energy system.

Adoption of NDC-2030 with a roadmap and transition to NDC implementation

Kazakhstan's NDC for achieving the objectives of the Paris Agreement was developed in 2020. The roadmap for NDC implementation in 2021–25 includes strengthening of the *Emissions Trading System (EMS)* along with phasing out gratuitous quotas and introduction of market-driven pricing mechanisms in the ETS. In addition, to reach the established objectives, consideration is being given to introduction of carbon tax to regulate emissions of companies beyond the scope of the ETS and to creation of a decarbonization fund.

In our view, it is essential to adopt the NDC and roadmap as well as to begin their implementation in the near future so as to prevent a rapid quota reduction and tariff growth, including a steep increase in carbon prices.



Significant modernization of approaches for setting power and heat tariffs

Technological modernization will involve substantial investment. In this context, it will be essential to observe one of the key decarbonization principles, i.e., fair transition, which presumes an even redistribution of the burden of achieving NDC objectives between companies, households and the state budget.

Any objective in creating a different combination of energy types, including decarbonization, will require mobilization of market-driven and competitive mechanisms in the power generation sector. In particular, the issue on the agenda is a gradual, but precisely defined and predictable increase in power and heat tariffs, taking into account the respective costs. At the same time, it will be essential to utilize the best available technologies and maintain stability of the energy system.

Active introduction of new technologies and new approaches to decarbonization of industry

One of the main recommendations is active R&D and hydrogen pilot projects in industry. By 2030

Kazakhstan should complete its research and have practical solutions regarding hydrogen utilization policy. This should include issues of its production, cost, and utilization not only as a fuel for industry and transport but also as an energy source for power generation.

Petroleum and natural gas producers should focus on reducing methane leaks and emissions as well as active development of carbon capture, utilization, and storage (CCS) technologies.

Mobilizing international green financial markets for modernization of capacity and equipment should become priority target of power generation companies.

In their turn, metal producers could do more to reduce the energy consumption and carbon intensity of their exportable products with a view to becoming part of a trend for production of green metals and their sale at a premium for low carbon intensity.

EY highly appreciates the commitment of Kazakhstan's government to the gradual decarbonization of the national economy and stands ready to support this exceptionally important process.

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OIL AND GAS COMPANIES - THEIR ROLE IN ENERGY TRANSITION

by Luciano Vasques

Head of Central Asia Region, Eni SpA

The climate agenda is one of the major challenges for the industry in general and in particular for the oil and gas industry. To achieve the goals of the Paris Agreement, meet the objectives of United Nations Climate Change Summit - COP26, many oil & gas companies are endeavoring to diversify their energy portfolios which cover the move from fossil fuels to a low carbon energy economy.

Energy transition challenges create a heated debate whether we are viewed only as part of the problem, or we should be crucial in solving it. While there are no “Royal Roads” in energy transition strategies, there are already certain patterns that O&G companies, including Eni, are already implementing, reshaping their businesses, bringing renewables and sustainable energy to the center of the business. The following article will briefly discuss what Eni is doing and then offer some more general considerations.

Eni aims to achieve carbon neutrality by 2050, supporting the energy transition. Apart from setting strategies and targets, Eni is actively deploying its energy transition projects globally following the Eni roadmap to 2050:

- **A progressive reduction in hydrocarbon production**, and an increasing the **role for gas** to reach a 90% share of the production mix by 2050.
- **Implementation of CCUS projects with 50 MTPA CO₂ by 2050.** Currently, the Eni CCUS portfolio is made up of both storage and utilization projects which cover all the business areas of Upstream, Power, Refining and Petro-Chemicals in Norway, Italy, UK, Libya, the UAE, and Australia with overall potential capture capacity by 2030 of around 13 MTPA.
- **Increasing the share of Eni biofuels production with ~5-6 MTPA Capacity.** Now, two proprietary bio-refineries in Italy convert bio-feedstock into Premium Biofuel for terrestrial and aviation uses. This product demand will be increasing, and we are promoting bio-feedstock production around the world.
- **Production of low-carbon hydrogen** from natural gas reforming in combination with CCS to renewable energy electrolyzers.



- **Eni supports the growth of renewables sources aiming** to reach 60 GW of renewable energy sources installed capacities by 2050. Recently, Eni established a business model entitled **Plenitude** which combines renewables generation, retail customers, electric vehicle charging and energy service.

In Kazakhstan specifically, Eni is currently studying the opportunities of several energy transition projects in compliance with company goals and Kazakhstan's decarbonization targets. Together with *KazMunayGas* as per our Memorandum of Understanding signed in July 2021 Eni is currently engaged in assessing and evaluating the potential initiatives to jointly implement *Renewable-Hybrid, Bio-feedstock, Hydrogen and CCUS Projects*.

Eni has started and intends to continue work side by side in the Energy Transition journey that Kazakhstan has just embarked on, prolonging the successful story of 30 years' collaboration in the oil and gas business since the day after Kazakhstan's independence.

A broader view to business transformation focuses on ingredients that need to be carefully dosed to make the transition viable for all the players, including O&G companies.

Investment

One ingredient is capital. Huge investments are going to be required to sustain the energy transition. The price tag for net-zero transition is estimated at upwards of \$100 trillion over the next 3 decades. Of course this applies to all countries and Kazakhstan is no exception. Actually, Kazakhstan faces a double challenge of modernizing its aging infrastructure, as well as adapting this infrastructure to make it low-carbon and fluctuation-resilient. To successfully overcome these challenges, investment should be directed to a new energy and power system in which,

as the priority is given to renewable sources, efficiency is pursued and associated flexible infrastructures are built. This will require billions of dollars.

In these circumstances, the O&G industry in Kazakhstan can play an important role as a proven means to stimulate economic growth and increase public revenues, while also potentially unlocking gas resources, key fuel of the transition path. In its turn, the government of Kazakhstan faces an important task of aligning its energy policy to attract investment in its upstream sector. New industry mix and diversification will require a wise combination of increased public spending and tax incentives.

Changing the Mindset and Human Element (technical skills and training)

A second ingredient is human capital. This ingredient is a direct enabler of the new economic model. The development associated with the energy transition is expected to create new jobs, which can more than offset the gradual decline caused by the phase-out of fossil fuels.

The human element, using those revenues to invest in the education and training of individuals to ensure a skilled workforce across all strata, not only sets out the strategy but implements it at the ground level. Anybody working in the energy world must have a broader and scientific vision of it, making the most of all available opportunities, opportunities that are changing constantly, and not be driven by ideologies. Changing the mindset and building competences in low carbon industries and providing skills training are key to ensure that deep-rooted change is effected and foundations for growth laid.

Technology

A third ingredient is technology. Technology and constant research will be the backbone of the transition – we must do a lot, testing, failing, and trying again. That will absorb part of those financial resources as well. Again, while the private sector needs to be intrepid, Kazakhstan's role in dosing incentives for the import, development and use of technology can make the difference in setting the speed of such transition.

Lastly, reforms

Here, you would say the role of any industry sector is marginal by definition: we are not lawmakers nor strategy setters. We apply those rules in our work. But our active, and, sometimes even unsolicited, contribution and advice can provide an important support to each country willing to change their path towards a low carbon energy system, as Eni has started doing in Kazakhstan. One reform, together with enhancing the investment climate, is the need to set up an Emission monitoring and trading system that will put Kazakhstan and its products alongside the rest of the developed economies.

In conclusion, apart from its own business transformation and diversification, the O&G sector can be instrumental in supporting Kazakhstan to create resources to feed the streams necessary to the transition, made of investments, people, technology and reforms, while we are also very much part of them. Kazakhstan should create an environment that supports the demand for more sustainable energy through a mix of regulations, incentives and direct investment that balances energy availability.



AMCHAM BUSINESS ROUNDTABLE PRESENTATION

THE GREEN REVOLUTION AND ITS GEOPOLITICAL IMPACT: NEW ACTORS, NEW CONCEPT OF POWER, NEW ENERGY SECURITY

by Ambassador Marco Alberti
Ambassador of Italy to Kazakhstan

The following article is an expanded version of a presentation at November AmCham Business Roundtable on Energy Transition

A rapidly changing scenario

Over the past twenty years, a series of phenomena has changed the world more than it had happened in the previous two centuries. In rapid succession: the new economy; a ramping financial globalization; unstoppable digitalization and the Fourth Industrial Revolution reshaped the international relations and the way authority, influence or power are conceived and executed. The economic component of international relations has grown, and with it the importance of non-State actors. The rules of competition have changed, and – accordingly - economic diplomacy has gained importance, becoming a driving force in the dynamics of promotion and protection of national ecosystems.

Big companies, as well as small and medium enterprises, compete in global markets. They can hardly thrive without internationalizing. Value chains have become global in a short time. E-commerce has grown exponentially and some multinationals have transformed themselves into geopolitical subjects to all effects, endowed with power and influence greater than those exercised by States. Additionally, the intersection of machine learning, artificial intelligence and big data is driving a significant shift in how work is performed, with more tasks automated than ever before, as the efficacy and availability of data increases. It is estimated that 62% of information, data processing, information search and transmission tasks will be performed by machines by 2022, compared to 46% in 2019. The WEF foresees that 65% of the kids who are six today, will do a job that does not exist yet. Public and private sectors must provide strong support for reskilling and upskilling people.

We live in a transformative time. Delaying decisions will only lead to more problems, and those problems will require more decisions. Each epoch in history, indeed, has been transformative in its own way, but the present time is exponentially transformative; its main feature is not *speed*, but *acceleration*. While any historical phase is marked by a greater operational speed than the previous one, our time is characterized by exponential accelerations. Peter Diamandis, one of the founders of Singularity University, recalls that in 2010 any average laptop exceeded in computing power the entire American space program that took us



to the moon. According to Klaus Schwab, a tablet has a processing capacity equal to 5000 fixed computers on the market 30 years ago, where the cost of storing information is close to zero. Archiving today 1 gigabytes cost less than \$ 0.03 per year on average, compared to \$ 10,000 twenty years ago. Something similar happened on the energy side: digitalization has accelerated the green revolution. The decade 2010-2019 has seen a spectacular improvement in the cost-competitiveness of renewables. The UNEP underlines that over the last 10 years the leveled cost of electricity for solar PV went down 81%, for onshore wind down 46% and for offshore wind down 44%. Renewables are now the cheapest option for new energy generation in many countries around the world. Consequently, the years 2010-2019 have seen \$2.6 trillion invested in renewable capacity (excluding large hydro), which is more than treble the total amount invested in the previous decade .

In this rapidly changing scenario, the main global challenges have some characteristics in common. First, they are *ultimative*: most challenges are directly linked with the destiny of humankind. Climate crisis is a case in point: the WHO estimates 7 million premature deaths every year due to emission-linked causes . Secondly, global challenges are *intertwined*: impossible to face one of them separately from the other ones. In this regard, for example, the World Bank estimated that by 2050 we expect to have 142 million climate migrants worldwide . Third, challenges tend to be *unequal*: while they affect everyone, in every community worldwide, the real fact is that they do not affect everyone equally; this is why any transformation should be faced (and managed) as a *just*, not only as a *fast* process. Finally, global challenges of our time are *multi-stakeholder*: their augmented complexity requires multi-stakeholder partnerships as an important (as well as new) *modus operandi*.

An unstoppable revolution

As the world is heating up, the international community faces a dual challenge: scaling up climate action and managing the potential disruptions following from the energy transition. It is not just about protecting the environment. Fight against climate change has rapidly become a cut crossing priority to elaborate national and international policies. Climate protection is a strategic axis to legitimate action and revive alliances (especially at multilateral level), but also to boost competition and pursue a rebalancing of power.



President Xi Jinping, in his 2017 speech at the 19th Congress of the Communist Party of China, pronounced the word *environment* 89 times. In 2019, China emitted 27% of the world's greenhouse gases, but the country also has the largest renewable installed capacity worldwide, playing a crucial role for the ecological transition to happen successfully. The overarching aim of the European Green Deal is for the European Union to become the world's first "climate-neutral bloc" by 2050. Its goals extend to many different sectors, including construction, biodiversity, energy, transport and food. One of the first acts by President Biden was reversing the US climate policies and rejoining the Paris Agreement. The Biden administration is now pursuing a US\$ 3.5 trillion federal overhaul including strong measures to reduce emissions and address climate change. The IEA, for its part, estimates that in 2021 renewables will be the single largest investment item in the energy sector, with US\$ 367 BLN, i.e. 70% of the total invested in new electricity generation capacity. In 2021, the ESG have reached 8 trillion US\$ globally, and they could exceed 30 trillion by 2030. A sick planet is a financial risk.

In the "great game" of international relations, the environmental challenge is not limited to government policies, but takes on the characteristics of an authentic geopolitical and geo-economic competition among national States and their ecosystems. Here, governments do not aim at the control over a territory or at the expansion of national borders. Rather, at stake is the "conquest" of global leadership in a highly

strategic sector, in which economic resources and advanced technologies converge, redefining rules of competition and the same geopolitical balance. As matter of fact, many different forces are pushing commitments to net-zero. Probably, Cop26 in Glasgow did not bring easy wins, but it raised several reasons for hope. Even though the outcomes did not fully meet expectations, the race to green will accelerate. De-carbonization is pushed not only to keep warming under 1.5, but also to provide consistent growth, create new jobs and generate revenue opportunities. According to IRENA (International Renewable Energy Agency), by 2050 33 trillion US\$ of additional investments are required into efficiency, renewables, end-use electrification, power grids, hydrogen and innovation. The ecological transformation, indeed, does not end with a simple diversification of the generation mix. It also encompasses greater demand-side management; massive processes of electrification and decentralization; infrastructure digitalization; the involvement of a range of new energy actors, and demand for new energy inputs, such as critical minerals. Each of these changes infers a need to re-think how energy redesign and influence geopolitics and geo-economics.

That being the case, the geopolitical derivative is that environment, like digitalization, can be ground of collaboration or, vice versa, of confrontation. This mainly depends on the choices of the players in the field, on their respective advantages/disadvantages, including the economic ones, and on their decision to interpret the relations with others on energy as a dialogue or a tough confrontation. Anyway, whatever the attitude of the actors involved, the right question is not *if* the ecological transition will have geopolitical impacts (and also risks), but *when* this will happen, and *how* to manage it avoiding instability. "These are arguments to encourage policymakers to look beyond the challenges of climate change itself and to appreciate the risks and dangers that will result from the jagged transition to clean energy. More consequential right now than the long-term geopolitical implications of a distant net-zero world are the sometimes counterintuitive short-term perils that will arrive in the next few decades, as the new geopolitics of clean energy combines with the old geopolitics of oil and gas".

We require a new comprehensive approach to the geopolitics of ecological transition that takes into account de-carbonization as a multi-faceted force; growing complexity of energy systems; how they are governed, as well as changes in relations between actors and systems; impact of forces boosting the ecological transition and changing the traditional concepts of energy influence, energy dominance and energy security.

Three synchronized transformations and two combined geopolitics of energy

Net-zero society requires managing three transitions at the same time: digital, ecological and geopolitical. Digitalization supports and accelerates the green race. According to the WEF, digital initiatives offer huge opportunity to help decarbonize the global economy. There is the potential to avoid an estimated 26 billion metric tons of net CO₂ emissions from just three industries: electricity, logistics and automotive from 2016 to 2025. In turn, digital and ecological transformations, acting together, modify the concepts of international power and influence, as well as the relations among States; define a new convergence of developed/developing countries and, ultimately, reshape geopolitics.

Since the second half of the 20th century, the world has relied exclusively on fossil fuels to meet most of its energy needs. The control of hydrocarbons—both for satisfying domestic demand and for controlling external flows to allies and adversaries—was an essential ingredient of the XX century geopolitics. Hydrocarbons, in other words, were at the very center of a delicate global balance between economic and geopolitical forces. Still today, changes in oil prices and availability continue to affect economic growth prospects, international security and political stability of consuming countries. To a large extent, many contemporary regional energy-driven contentions – among producing, transit and market states – determine the world's energy security architecture.

Despite the global energy economy is undergoing a rapid transition from 'hydrocarbon molecules to electrons', dependence on hydrocarbons is likely to have a rise before falling. It has been calculated that, if the world reached net-zero by 2050, it would still be using 50% as much natural gas as today, and about ¼ as much oil. On the other hand, while decarbonizing the power supply, States electrify their energy systems. By 2026, global renewable electricity capacity is forecast to rise more than 60% from 2020 levels, to over 4 800 GW, equivalent to the current global power capacity of fossil fuels and nuclear combined. Renewables will account for 95% of the increase in global power capacity through 2026, with solar PV providing more than half. Fight against climate change, along with political pressure and financial investments, will move the world toward a net-zero society. Companies, including some oil and gas majors and electric power companies, are promising to go "net zero carbon", major pension funds are adding "Paris goals" to the criteria by which they evaluate investments, banks are cutting back



on lending for traditional energy projects and auto makers are planning to go all-electric in the 2030s. Cop 26, finally, accepted a trajectory of "phase down" instead of a "phase out" of coal, but the route is marked. According to some analysts, reshaping a global economy so linked with oil revenues would be difficult under any circumstances. It is even more difficult during Covid-19 and the current economic crisis. As it turns out, oil revenues could be essential to fund the investments required to diversify away from oil. Moreover, the race to green and the rise of renewable energies are unstoppable; it is not too early to see how this shift is likely to affect the global balance of power. In the next few decades, we will be facing two, combined geopolitics of energy: the *traditional* one and the *transitional* one.

The new geopolitics of the ecological transition

Energy and politics have always been closely intertwined and they will likely remain so, no matter the source of energy or where it is coming from. The global transition from fossil fuels to renewables will be defined by evolution rather than revolution, and the geopolitics of hydrocarbons will be challenged rather abandoned. Yet, net-zero demands a transformation of the entire economy. Just as fossil fuels have shaped the geopolitical map over the last two centuries, the ecological transformation, based on renewable energies, will alter the global distribution of power, relations between States, the social, economic and environmental drivers of geopolitical scenarios. More specifically, seen from the geopolitical point of view, the ecological transition is accelerating at least three main shifts:

- **The first shift** is from *commodity* to *technology*. A net-zero economy would be impossible without massive tech innovation. Every day, developments in digital technologies are pushing the boundaries of what is possible, to boost positive and sustainable change also in the energy sector. We are rapidly moving from commodity-based energy systems to technology-based energy systems. In the green energy scenario, geopolitical confrontation (and cooperation) will depend much more on control over technology than on control over commodity. Power and influence are moving from countries endowed with commodities to countries holding the ownership rights over technologies, especially over the renewable generation and distribution grids. The power of some States to set technological standards will grant them competitive advantage and geopolitical influence.
- **The second shift** of geopolitical relevance determined by the ecological transition is from *transportation* to *distribution*. No transition is possible without digitized grids. The more renewable energy is used the more digitized grids are needed. Electricity is the main carrier for renewables, but, compared to hydrocarbons, electricity is harder and more expensive to transport over long distances. As a consequence, we are going towards a model of regional electrified grid communities, where “*continuity of commodity supply*” is replaced by “*continuity of service supply*”. In the coming years, the XX century geopolitical tensions created by fossil fuel scarcity and the possibility of peak oil supply, will probably be replaced by a XXI century race to control cross-country transportation as well as distribution electric grids. Evidence shows that electricity geopolitics can be used as a tool to deepen international cooperation or a way to put pressure on neighboring States.
- **The third relevant shift** we are facing is from *physical* to *digital* energy security. Electrification is a powerful driver for an accelerated transition to net-zero, and grids are the backbone of this profound transition. According to Eurelectric, there is an urgent need to ramp up investments in Europe’s distribution grids by 50-70% in the 2020s compared to the previous decade. Electrification is a megatrend shaping not only the energy system and the de-carbonization process, but also society, global development, and energy security. Electricity security is key to well-functioning modern societies and economies, as well as to generate inclusive growth and sustainable development. “Digital technologies,

communication infrastructure, and industrial operations, all depend on a reliable and efficient supply of electricity. As countries transition to less carbon-intensive sources of electricity, system operators face a number of ongoing challenges, as renewables generally require a higher degree of flexibility from the network to compensate for their intermittency. As such, governments are increasingly concerned about the ability of existing markets and regulatory frameworks to continue providing a reliable, affordable, and efficient supply of electricity”. Being increasingly more interconnected and digitized, power grids become (a geopolitical asset) extremely vulnerable to cyber-attacks. This vulnerability is not new: it was proved for the first time in 2010, when a computer worm known as “Stuxnet” derailed nuclear centrifuges in Iran. Today, however, threats to the cyber security of grids are becoming more frequent, complex and creative. Additionally, most cyber-attacks are financially motivated, which makes them even more dangerous and malicious. Over the past two years, indeed, the grids of many States, including Ireland, Ukraine, Germany and the US, were targeted by an unprecedented number of cyberattacks, giving origin to a previously unknown cyberization of the geopolitics of energy. As electrification grows, and societies come to depend more on electricity for their energy needs, protecting digitized grids from cyber-attacks turns into an essential part of the new energy security.

The future (uncertain) energy map and present (clear) geopolitical risks

Some concluding remarks

First. The energy transformation will yield new energy spaces, defined by electric infrastructures, production chains, industrial clusters, more distributed energy sources and a shift from an oligopolistic energy market to a much more competitive one, with potential re-distribution of global wealth. For more than half a century, access to oil and gas has been at the heart of the traditional geopolitics of energy (being a source of international influence). Now, with many forces pushing the ecological transition and renewable technologies expected to dominate energy supply systems, economies and societies will undergo structural transformations, while relations between States will change radically. On the one hand, all agree on adopting more sustainable models; on the other hand, climate ambition requires shared objectives, a lot of collaboration and adequate resources to limit the destabilizing impacts of transformation and turn commitments into projects.

Second. When energy changes, so does the world. One key-feature of the current transition is the leading role of the private sector and the need of a strong public-private cooperation. Certainly, constructive public policy - as well as multilateralism - will be essential, to set the right stage for the ecological transition to happen. Equally important and impactful, however, will be the decisions and investments being made today by the private sector. "With global public debt running at an all-time high of over 80% of global GDP, it will increasingly fall to the private sector to make the critical investments in smart new energy infrastructure that will bring energy access and resilience to people around the world ". All this recalls: (i) the importance, for States, of creating business environments suitable for attracting investments to support ecological transformation; (ii) the growing relevance of diplomacy, and particularly of economic diplomacy, as a strategic public asset.

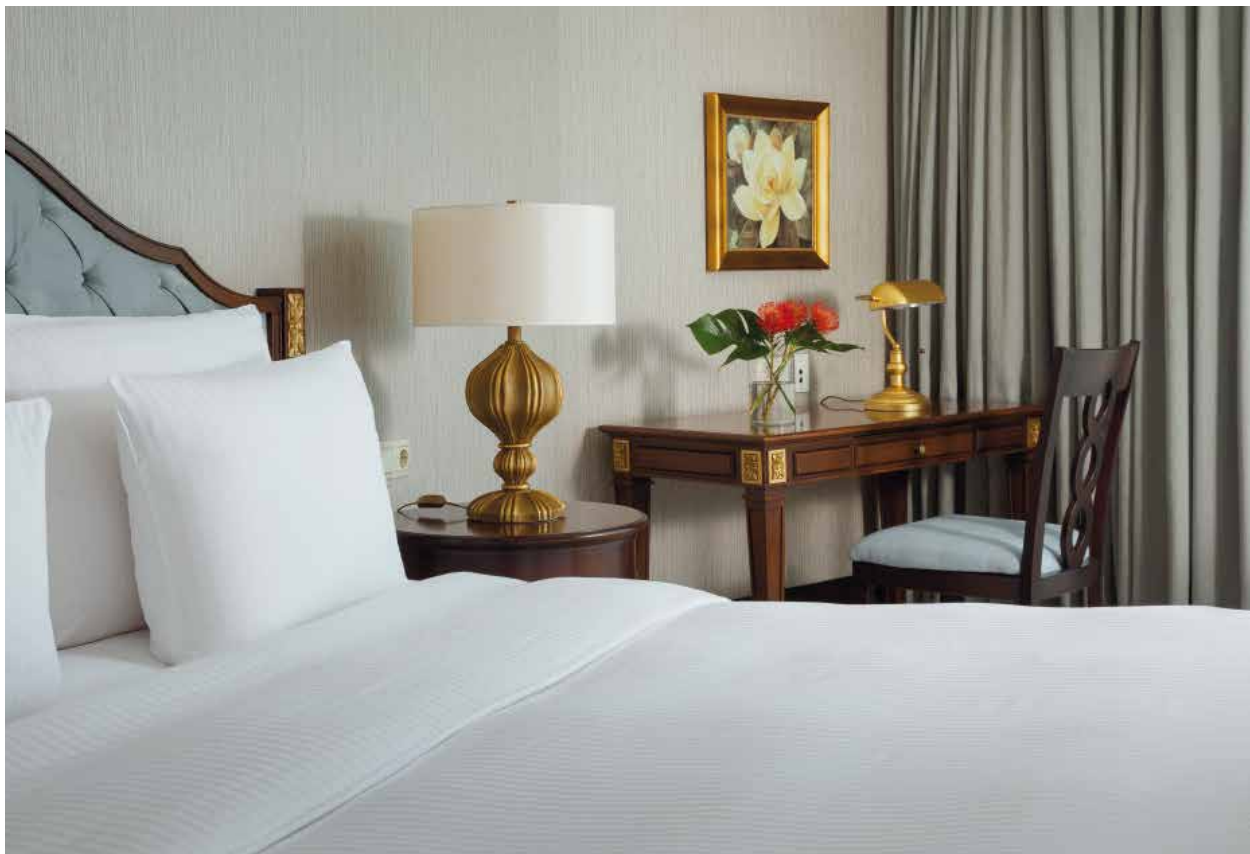
Third. The geopolitics of renewable energy will feature a new type of competition concerning sources and technologies. Today's focus still rests on individual sectors (i.e. electricity, buildings, transport, industry), each characterised by a dominant mix of (fossil and non fossil) fuels. The future focus, instead, will be largely in sector coupling integrating. At different speed, the fight against climate change, electrification, heat, and mobility will reinforce the relocation of energy spaces and the reconfiguration of influence. These changes have geopolitical implications. The ecological transition, indeed, comes with huge opportunity and concrete chances to accelerate the post-pandemic recovery, but also with costs and geopolitical risks for the international stability. It is assumed that the transition will cause serious economic losses to fossil fuel producers and weaken their geopolitical influence.

While this appears self-evident, it is important to note that the size of the losses, and the gravity of the consequences, will depend on the speed of the transition and the capability of these countries to adapt to the new global energy structures.

Fourth. The clean energy transition has a "security imprint" that directly impacts on sectors such as energy, defense, the global economy and geopolitics. The same N.A.T.O. considers climate issues a major threat and a factor that can undermine livelihoods, increase migration, create political instability or other forms of insecurity. Moreover, the digital component of the ecological transition reshapes the concept and nature of energy security, turning it more electric, more regional-oriented and, above all, more "cyberized".

Fifth. We ignore what the energy geopolitical map will look like in 30 years. For sure, the green transition will have transformative impacts on the geopolitical dynamics. Yet, even under the most aggressive climate change policies, evidence show that the world will continue to use oil and gas for some time. Consequently, in the next few decades, a *traditional* and a *transitional* geopolitics will inevitably combine and sometimes overlap. The message is clear: empowering the early winners of the green energy transition is good, but not enough. We should also put the focus on the potential disruption resulting from sudden falling fossil-fuel demand, and from the economic-and-security risks deriving from possible destabilization . One possible response from governments could be linking low-carbon policies and technology not only with climate issues, but also with foreign and security policy, as they did with oil and gas.





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MEMBER NEWS



Chevron Announces Appointment of Derek Magness to Head Eurasia Business Unit

Chevron's Eurasia Business Unit (EBU) is pleased to announce that Derek Magness has been appointed as Eurasia Business Unit Managing Director, based in Kazakhstan. The role is effective January 1, 2022. Derek Magness will succeed John Baltz who has served as EBU MD since 2018.

Derek Magness received his Bachelor's degree in Electrical Engineering from Louisiana State University and joined Chevron in 1997 as a facilities engineer. He has since held several senior roles and leadership positions for Chevron in South Africa, Angola, Poland, Bangladesh, the U.K and the US. His most recent position at Chevron was Managing Director at the South African Business Unit in Angola. Derek Magness was also based in Kazakhstan as the Deputy Eurasia Business Unit Managing Director between 2009 to 2012.

"I am honored to be returning to Kazakhstan in my new position and am very excited to be part of Chevron's activities in Eurasia," said Derek Magness. "I look forward to continuing to work with our respective partners across this important region as we continue to build on our mutual successes."



Norbert Funke to Head IMF Regional Center for the Caucasus, Central Asia, Mongolia

The International Monetary Fund (IMF) is setting up a new regional capacity development services which account for one-third of IMF activities. CCAMTAC is a collaborative venture between the IMF, nine member countries (*Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyz Republic, Mongolia, Tajikistan, Turkmenistan, and Uzbekistan*), and development partners. The Center is a major step in deepening the Fund's engagement to support economic policymaking and institution-building in the region through capacity development services. Capacity development accounts for one third of IMF activities.

Kazakhstan, the host country, is a major contributor to the CCAMTAC, along with other member countries, development partners — the *Asian Development Bank, China, Korea, Poland, Russia, and Switzerland* — and the IMF. The United States communicated its intention to support CCAMTAC and is a member of the steering committee. The Center will open physically in Almaty in 2022.

The Center is headed by Norbert Funke, who brings significant experience in IMF capacity development, surveillance, and program work. In the *IMF Institute for Capacity Development (ICD)* he headed the African Division and later the Asian Division. In 2012–16 he was Director of the *Joint Vienna Institute (JVI)*. Prior to this, he served as mission chief in the African Department. Before joining the IMF in 2000, Norbert worked at *McKinsey & Company, the OECD, and the Kiel Institute for the World Economy*. He holds a doctorate in Economics from the University of Cologne.



Sibel Demir is Appointed General Manager of Kimberly-Clark in Turkey, Central Asia, and the Caucasus

Kimberly-Clark recently united its CIS and Turkish operations into one Business Unit (CISTK) that is led by Sibel Demir, General Manager of Turkey, Central Asia and Caucasus.

Sibel Demir has been with Kimberly-Clark for 17 years and has been named among the top 50 female CEOs in Turkey. She has a wealth of experience, joining the Kimberly-Clark sales organization and building her career in financial reporting, treasury management and business analysis. Before becoming General Manager, she was Chief Financial Officer of Kimberly-Clark's Turkish operations.

Sibel Demir is an inspirational and results-driven leader with diverse experience in transformational leadership. She transformed the Turkish business model and, together with her team, built a new market strategy in Turkey. She leads one of the strongest feminine care brands in Turkey which actively supports women's development and gender equality in society. The CISTK merger gave Kimberly-Clark a great opportunity to leverage the strengths of these three regions to accelerate success.



Alexander Tarishkin – General Manager of AstraZeneca Kazakhstan

Alexander Tarishkin is the General Manager of AstraZeneca Kazakhstan, a new member of the American Chamber of Commerce in Kazakhstan. He has 17 years of experience in pharmaceuticals in international companies: Sanofi, Merck, Teva, and IVAX, and holds a medical degree in surgery from South Kazakhstan State Medical Academy, an MBA from UK Open University, and an Executive MBA from KIMEP.

AstraZeneca is a multinational research-oriented pharmaceutical and biotechnology company with its headquarters in Cambridge. It has representative offices in over 100 countries with offices in Kazakhstan since 2003. AstraZeneca's main goal is research, development and market launch of prescription-only medicines, mainly in oncology, cardiology, nephrology and metabolism, respiratory and autoimmune diseases.

The main AstraZeneca office in Kazakhstan is based in Almaty. Over 100 people work in 16 regions of the country.



ADVOCACY UPDATE

OCTOBER – DECEMBER 2021

The December session of the *Prime Minister's Council to Improve the Investment Climate* concluded the Council sessions in the summer and autumn of 2021 addressing the COP26 U.N. Global Climate Change Summit by stages:

- **The June Council** took a forward look into 'Alternative Energy – The Path to the Future'
- **The October Council** took the next step prior to COP26 in November with the Council topic, 'Addressing the Urgency of Climate Change'
- **The December Council** concluded with an enquiry into the COP26 final *Climate Action Pact*, 'Financing COP26 Climate Pact Commitments, The Next Challenge'.

All of the December presentations together with the Summer and Autumn presentations are published in this Issue of *Investors' Voice*.

Each of the 3 Council sessions featured a slate of prominent speakers, some speaking from abroad via video-presentations and others speaking in-person from Kazakhstan. Each speaker addressed the Climate Crisis with the COP26 Summit in mind.

Speakers from the leading IFIs – the *International Monetary Fund*, the *OECD*, the *International Energy Agency*, and the *EBRD* – all joined the December Speaker Agenda to present their thoughts and recommendations along with Ambassadors and Special Envoys whose countries are intensively involved in the global dialogue. Experts in *Canada* and *Kazakhstan* and two leading oil companies, *TotalEnergies* and *Eni*, also participated.

The discussion of COP26, its preparations, conclusion, commitments, and future implications was welcomed by the Prime Minister and Government as Kazakhstan, a signatory to the *Paris Accord* underlying COP26, seeks its own response to the Climate Crisis.

Although President Tokayev was scheduled to attend the Summit in Glasgow, he was instead represented by Prime Minister Mamin, whose responsiveness to the Summit topic and goals was noticeable, particularly at the December Council.

The four lead-in presentations at the December Council were from the IEA, IMF, OECD, and EBRD, major International Financial Institutions with a solid knowledge of Kazakhstan and deeply involved in planning for global energy transition



- ✓ The first presentation was from *Dr. Fatih Birol, Executive Director of the International Energy Agency (IEA)*, created by the OECD in 1974 as a specialized agency for energy matters that maintains its OECD connection today although operating as an autonomous international agency. It is a highly respected body that has taken a strong stand on energy transition, decarbonization and renewable energy.

Dr. Birol positively assessed the COP26 achievements: *Commitments, International Collaboration*, and *Rules*. He stressed the importance of creating a *Financial Strategy* to enable implementation of the commitments and noted that the COP26 Presidency had tasked the IEA with leading global efforts to monitor reducing the costs of key clean energy technologies – *power, road transport, steel, and hydrogen*.

- ✓ The second presentation was a strongly economic and financial perspective from the *IMF Eurasia Division Chief, Nicolas Blancher*. Noting that the Council topic – how to finance the Global Energy Transition – was a current IMF preoccupation entailing significant resources, the speaker assessed Kazakhstan's economic prospects in the context of medium- to long-term challenges and opportunities from climate change and its need to reduce the economy's dependence on fossil fuels. He stressed key reform priorities to support this transition, in particular the roles of the state and private sectors and fiscal policy.
- ✓ The third presentation from *Pascal Saint-Amans, Director of the OECD Center for Tax Policy* was a detailed analysis of Kazakhstan's economy and tax structure and need for reform in both areas. He stressed that the current reliance on O&G for tax revenue and exports is unsustainable. Diversification of the tax base is urgent through a combination of tax and non-tax policy changes.

- ✓ The last IFI presentation was delivered by *EBRD Kazakhstan Country Director Huseyin Ozhan*. The EBRD is noted for its many years of support for sustainable development and renewable energy projects (113 Green Energy projects signed in Kazakhstan with an investment of 2.3 billion EUR since 2006). EBRD has also supported the Government in developing the regulatory base for renewables since 2008.

The two presentations by *Italian Ambassador Marco Alberti* and *Netherlands Ambassador Andre Carstens* were complementary and informative on a number of points.

- ✓ *Ambassador Carstens*, substituting for EU Ambassador Jankauskas, devoted his presentation to an overview of EU objectives that must be aggressively pursued:
 - To cut emissions limiting global warming to 1.5 degrees
 - To collect \$100 billion per year to assist developing countries support transition
 - To get agreement on the Paris Rulebook

On financing the COP26 Climate Action commitments, Ambassador Carstens stressed the need for a long-term EU plan beyond 2025. The goal of \$100 billion per year to support climate efforts by developing countries has made good progress, but a longer-term strategy is needed. The mechanism by which public finance is used to generate private finance for climate efforts has shown promise and should be encouraged.

- ✓ *Ambassador Alberti*, substituting for UK Ambassador Kathy Leach, devoted his presentation to geopolitics and a new concept of energy security. Climate has become a mainstream political item on the international agenda and geopolitics is intricately involved in ecological transformation. The shift to low-carbon solutions is impacting whole economies and changing the political dynamics within and between countries.

The two EY speakers – *Erlan Dosymbekov* in Kazakhstan, and *David Robertson* in Canada – brought different, but complementary perspectives to the discussion.

- ✓ *Erlan Dosymbekov*, EY Managing Partner in Kazakhstan, focused on a series of recommendations for Kazakhstan, including approving the *NDC Update 2030* along with



the accompanying *NDC Roadmap 2051*. He also pointed out thus the currently suggested reduction of CO2 quotas by 26% in dramatic and not in line with the NDC plan for a smoother reduction in over a 3 year period.

- ✓ *David Robertson*, an EY Partner and International Tax Litigator at EY Law in Canada, delivered a series of powerpoint slides on carbon taxation and Canada's pending adoption of a Border Carbon adjustment similar to the European Union. The presentation examined the pros and cons of the EU model and compared it to the Canadian model under discussion, a comparison that Kazakhstan may also wish to consider.
- ✓ *Luciano Vasquez*, Head of ENI, Central Asia spoke on behalf of both Eni and the oil industry by clarifying the implications of energy transition to energy business models. O&G companies are confronted with a heated debate about whether their industry is only part of the problem or whether they can be crucial in solving it.

Oil companies, including Eni, are reshaping their businesses in different ways, bringing renewables and sustainable energy to the center of their business. This process needs to make the transition viable for all the players and should include the following elements:

- Changing the mindset and human element (technical skills and training)
- Technology
- Country reforms

AmCham's examination of the 3 stages of COP26 is complete for now, but we will continue to follow the progress of the Summit's commitments, especially for Kazakhstan. COP27 will be held next year at Sharm el-Sheikh to assess 2022 progress and to determine further commitments to advance the Energy Transition agenda.

WORKING GROUPS UPDATE

OCTOBER – DECEMBER 2021

Almaty Technology and Innovation Working Group, November 30, 2021

The Almaty Technology and Innovation Working Group met on November 30 chaired by *Sergey Leschenko, Microsoft Country Manager*. The Guest Speaker was *Nurlan Zhanybek, Education Leader at Microsoft Kazakhstan*. The topic was “*Modern Education, IT Skilling for Kazakhstan’s Innovation and Development*”.

The meeting’s focus was computer services in the education process, an important element in Microsoft’s business. The company signed a Memorandum with the Ministry of Education and Science to work together on transforming education, promoting innovation, and preparing young people for employment.

Microsoft is present at all stages of the educational process. In early education, the company inspires with STEM and informatics, then in secondary education, productivity skills and new technological concepts are taught. Video games, in particular Minecraft, are also used. During the tertiary education phase, the company enhances employability through development of technical skills, hands-on experience, and certification.

Microsoft announced the launch of the *Global IT Skills Development Program*, which aims to build digital skills. Participants will be able to attend webinars on the organization of a modern workplace and team collaboration, modern cloud technologies, analytics with Microsoft Excel, project management in IT, analytics with Power BI, Microsoft 365 for education, as well as basic digital skills for users.

Almaty Technology and Innovation Working Group, December 21, 2021

The Almaty Technology and Innovation Working Group met on December 21 chaired by *Sergey Leschenko, Microsoft Country Manager*. The invited speakers were *Tomislav Vracic, Microsoft CEE National Technology Officer*, *Rinat Gumarov, Microsoft Public Sector Account Executive*, *Dinara Tanasheva, Partner, EY Tax & Law Services Leader for Kazakhstan and Central Asia*, and *Nargiz Suleimenova, Senior Associate, EY Tax & Law*. The topic was “*Government Digital Transformation Globally and in Kazakhstan*”.

Tomislav Vracic delivered an overview of innovative approaches in Estonia and Latvia. In Estonia, information and communication technologies are used so that smart solutions can be used to increase the quality of life and employment, ensure the viability

of the Estonian cultural space, increase economic productivity, and make the public sector more efficient. In Latvia, E-governance projects are the innovation platform and launching pad for implementation of innovative projects with high commercialization and export potential in the future.

Rinat Gumarov then spoke about the main trends driving digital transformation in Government, delivering a comparative analysis of the stages of maturity of Digital Government from Analog to Intelligent Government.

Dinara Tanasheva and *Senior Associate Nargiz Suleimenova* gave an overview of GovTech market development with a discussion of the international experience of Israel, the United Arab Emirates, and Singapore in providing digital public services. The latest news in the digital space of Kazakhstan was reviewed, including signing of a Memorandum of Cooperation for implementation of digital transformation projects, the transition to a platform model of digitalization, and the concept of *Data-Driven Government* with Sberbank.

Almaty Healthcare Reform Working Group, December 23, 2021

The Almaty Healthcare Reform Working Group met on December 23 chaired by *Ksenia Babushkina, EY Partner and Head of the EY Advisory Practice*, and *Andrei Yorsh, Baker & McKenzie Partner* specializing in Intellectual Property.

The latest news in Kazakhstan’s healthcare system was reviewed, including the departure of the Minister of Healthcare and possible replacements. Discussion continued with revaccination issues and the danger of the Omicron COVID-19 variant.

The Group then proceeded to discuss universal access to medicines and the price deregulation process in Kazakhstan. If certain drugs are not profitable to sell on the Kazakhstan market, a revision of their prices or their withdrawal from the market will be inevitable.



KARACHAGANAK: CARING FOR FUTURE GENERATIONS



Karachaganak is one of the world's largest oil, gas and condensate fields that has been operated by Karachaganak Petroleum Operating B.V., an international consortium consisting of Eni, Shell, Chevron, LUKOIL and KazMunayGas.

Karachaganak today is a world-class asset, where principles of sustainable development and social responsibility are effectively embedded in

all business processes. The Venture strives to achieve carbon neutrality and zero greenhouse gas emissions as one of its key priorities.

While aspiring to reach new operation highs KPO remains true to its corporate principles based on constructive partnership with the Republic of Kazakhstan and care for the well-being of future generations.



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THE MALDIVES



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