

14th EURASIAN ECONOMIC FORUM IN VERONA

SPECIALL SESSION

Reliable energy and global energy transition

SPEECH OF I.I. SECHIN

**The Need for Structural Changes in the Economy and the Future of
Energy**

**Verona, Italy
October 28, 2021**

Table of Contents

- 1. Climate agenda leads to structural changes in the economy 8**
- 2. Ambivalence of decarbonization processes 12**
- 3. Energy transition is possible only with stable energy imports
and development of new materials and technologies..... 15**
- 4. Who will gain advantages from the energy transition? 17**
- 5. Response to climate challenges 19**

Dear participants and guests of the Forum!

I am extremely happy that we have gathered in the hospitable Verona again.

Our forum has been traditionally a site that brings together distinguished politicians and public figures, leaders of major companies who are committed to the principles of Eurasian partnership and are willing to exchange expert opinions on the issues and the future of the global sustainable economic development.

It is a great honor for me to speak today in my capacity as President of the Eurasian Economic Forum.

I warmly welcome the guests of this event, and I would like to express my gratitude to all the panelists and the distinguished audience for their willingness to discuss the most pressing issues.

I would especially like to thank for their participation: Gerhard Schröder and His Excellency Mohammed Al Thani – Deputy Prime Minister and Minister of Foreign Affairs of Qatar; Bernard Looney – Chief Executive Officer of BP; Robert Dudley – Chairman of the Oil and Gas Climate Initiative; Ivan Glasenberg – the key shareholder of Glencore; Neil Chapman – Senior Vice President of ExxonMobil; Lorenzo Simonelli – President and Chief Executive Officer of Baker Hughes; Jeremy Weir – Chief Executive Officer of Trafigura, Giorgio Starace – Italian Ambassador to Russia, Gaetano Micciché – Chairman of the Board of Directors of ‘Banca IMI’, Federico Sboarina – Mayor of Verona, Giovanni Bazzoli – Honorary President of Intesa Sanpaolo and our other guests today.

I also welcome and thank Mrs. Karin Kneissl and Mr. Cassieri who kindly agreed to moderate our discussion today.

Special thanks go to my dear friend Antonio Fallico, Chairman of the Board of Directors of Banca Intesa in Russia and President of the Conoscere Eurasia Association for the high quality of the organization of the Forum, whose annual schedule remains unchanged despite any difficulties.

Before beginning the discussion, I must of course mention the limitation of liability in view of the evaluative and predictive judgments in my presentation.

Uncertainty in the global economy due to the difficult epidemiological situation is still there. **The pandemic continues, remaining a key factor affecting the global economy.**

Despite extensive efforts to ensure the necessary level of vaccination, collective immunity has not yet been established. Moreover, World Health Organization Director General Tedros Adhanom Ghebreyesus stated back in July of this year that **dangerous new strains of coronavirus are outpacing vaccination**, also because of the uneven distribution of vaccines around the world.

There are no universal solutions to pandemic problems yet; new strains and diseases may lie ahead. In 1990, the International Classification of Diseases numbered around 14 thousand items; in the new version that will come in force next year, there will be about 55,000 items. In the past 100 years, the world has experienced four epidemics of influenza, three epidemics of coronavirus infections, and major outbreaks of viral hemorrhagic fevers (such as Lassa fever and Ebola). **We have entered a new era in which better diagnostics, accumulated knowledge, and modern clinical approaches allow us to identify more than 1,200 new diseases per year. Unfortunately, we are still unable to answer the question which ones of those are the greatest danger to the future of mankind.** As the experience of the coronavirus pandemic shows, vaccines alone are not enough to successfully fight them - other medicine is also needed. The health and pharmaceuticals industry must be proactive and address not only commercial but also humanistic issues.

“Green” energy companies should also be concerned not so much about rapid capitalization growth through price increases for consumers, but rather about **ensuring a consistent energy transition that does shake the economy and consumers** because there have been more than enough shocks since the beginning of the pandemic.

Global supply chains, including maritime transport, railroads, motor and air transport, have not been prepared for high supply and demand fluctuations. Not only supplies of finished goods, but also supplies of raw materials have been disrupted, as the recent situation with the tanker that blocked the Suez Canal illustrated.

The modern industrial model, which implies operating with minimal inventories, the so-called "just-in-time" model when raw materials or goods received from suppliers are immediately sent to production, allows to reduce costs. However, the economy is becoming increasingly interconnected, and the importance of reliable infrastructure comes to the fore.

Apparently, the increasing complexity of global production relations and the need for stable supplies should lead to a rethinking of the role of inventories, the need to maintain them at reasonable levels that reduce the uncertainty and risks of disruption.

The importance of commodity stocks was well illustrated by the current gas crisis in Europe. **Due to the shortage of long-term contracts gas storages were only 75% filled compared to the 10-year historic level of 90%. This level has now fallen even further, to 65-70%. With the growing demand, the limited capacity of alternative generation to ensure stable power supplies not only in winter, but also in the more weather-friendly summer and autumn periods, led to record high gas prices,** which went over \$1,300 per 1,000 m³ - a level no one could even imagine before. This level of prices certainly threatens Europe's economic recovery. **Record high prices were an indicator of the shock Europe was experiencing.**

Long-term contracts ensure a certain stability of the gas market, but do not guarantee its full sustainability, as spot supplies on short-term deals develop.

But Europe's hopes for spot LNG supplies from the United States have not been met. Moreover, the prices for such supplies have not been properly hedged. LNG supplies under long-term contracts with Qatar have

not been able to meet the growing demand.

Additionally, the situation in Europe is complicated by the growth of the Chinese economy which grew by 2.3% even in the crisis year of 2020, and by the end of the current year its growth rate will reach 8%, while the Eurozone economy will grow by 5%. A consequence of the rapid recovery and growth of the Chinese economy is the growing demand of this country for all types of energy imports: compared to the previous year, oil consumption this year will increase by approximately 10%, and demand for gas will grow by 7-8%.

Thus, the gas crisis was not due to any single reason, but to a combination of a number of factors that had a simultaneous effect.

Russia, for its part, contributes to resolving the crisis as much as possible by ensuring the stability of gas supplies to Europe. In doing so, **our country always fully meets all of its contractual obligations.**

Although we are witnessing a politicization of energy issues, **Russia remains the most important and reliable supplier of gas to Europe**, and we need to not only maintain but also strengthen our bonds of friendship and mutual understanding.

The current gas crisis proves the point I have repeatedly made in previous years, also at this rostrum, about **the fragility of balances in energy markets and the risks associated with forcing the energy transition and discouraging conventional energy.**

The crisis has already begun to spread to other sectors. China, which accounts for 90% of the world's magnesium production, has seen its output sharply curtailed due to energy rationing. Shortages of magnesium used for the production of aluminum alloys threaten the automotive industry and a number of other industries where these alloys are widely used.

In addition, the global shortage of supply of raw materials that we see in the energy industry is also evident in the production of microchips. As a result, chip manufacturers are choosing the customers to whom they ship products at their own discretion, thereby taking on a function of regulating

the market which is not normally their remit. **And since microchips are now part of virtually every piece of technology, from cars to toothbrushes, it will not be an overstatement to say that they are shaping the direction of the world economy as a whole.**

For example, such giant as **Taiwan Semiconductor Manufacturing Company** with a capitalization of over \$600 billion, **controls about 1/4 of the global semiconductor market.** Also, on the market of microchips produced by order of other companies, its share exceeds 50%, and **its production of the most advanced microchips manufactured on orders, according to some estimates, is about 90%.**

All of **these factors make one think once again about the limitations that are part of the existing model of capitalism, which was recently mentioned by the Russian President Vladimir Putin - all of them prevent us from finding solutions for today's challenges.**

To prevent the crisis from spreading throughout the world economy, **it is important to ensure coordination between regulators and suppliers, as well as consumers, whose demand determines economic growth.**

It is thought that **the world's largest stock exchanges, such as New York, London and Shanghai, which are the registration centers for most transactions, could also register long-term contracts for energy supplies, thereby helping to balance markets.**

The priority of global economic development should be an integral approach with a focus on increasing the contribution of key sectors, which include energy, new materials, information technology, electronics, pharmaceuticals, agriculture, transport and logistics.

The issue of the technological feasibility of the energy transition is not unimportant either. The International Energy Agency estimates that, **by 2050, about half of the technologies needed to achieve low-carbon development goals will still not be ready for deployment.**

At the same time, **competition for funding is intensifying and the**

green energy industry is increasingly subsidized, distorting its real returns, which so far remain quite low. This leads to the development of a new type of subsidized industries, absorbing resources from other sectors and preventing the implementation of free competition principles.

For an energy transition to happen, the structure of the global economy must change, but it cannot happen overnight. The energy transition must be synchronized with supply of energy, reliable supplies of metals and other materials, technological development, and the adjustment of consumer behavior. Without this, the basic concept reflected in the word "transition" as a process evolving over time, will be unworkable.

The energy transition should not be a goal in itself, but the reliability of the energy supply should be its first priority.

1. Climate agenda leads to structural changes in the economy

This year has clearly demonstrated that erroneous decisions in the area of climate policy can lead to serious negative consequences for the entire global economy and society.

Along with this there are increasing calls to terminate oil and gas investments. In some cases, it seems that those advocating an early withdrawal from fossil fuels ignore the risks of imminent market imbalances.

On May 26, 2021, a Dutch court in The Hague, consisting of judges Larissa Alwin, Irene Kroft and Michiel Harmsen, passed a verdict in which they ordered SHELL to reduce its emissions more significantly and much faster than its shareholder-approved strategy.

Strict compliance with the regulation in force in the countries where the company operates was disregarded. Instead, **the company was accused of "improper public conduct" and a violation of human rights**, which the court interpreted extremely broadly - **every instance of SHELL's**

greenhouse gas emissions in any part of the world increases the risks to the lives of Dutch residents. The court found that because sea levels are rising everywhere, this also poses a risk to the Netherlands itself, some of whose territory is below sea level.

The court had to refer to human rights because **it is impossible to objectively conclude to what extent the company is responsible for global climate change.**

As the President of the Russian Federation Vladimir Putin rightly noted - **"If people who lack any professional insight take these decisions [to reduce greenhouse emissions], you inevitably get price swings on the global market "**.

Earlier, oil and gas companies sought to get rid of unprofitable and climatically "dirty" assets. Thus, BP withdrew from the Prudhoe Bay project in Alaska. However, this does not solve the problem of reducing greenhouse gas emissions, because the assets sold by the majors are often purchased by small and often times private companies, which are less transparent and do not make climate commitments.

I have to say that the **risk of new lawsuits of this kind is quite high. Not only oil and gas companies are at risk, but also banks and investors who may in fact be prohibited from investing in oil and gas.**

Thus, in addition to the economic system of coordinates, **an alternative system is being introduced that is based on climate pressure and even blackmail**, which excludes the basic principle of economic efficiency. **This ignores the social responsibility of market players** that the overall well-being of people largely depends on.

The pressure of climate activists is also increasing in the United States, as we see in the example of EXXON MOBIL, but here they act differently: instead of filing lawsuits, climate activists have turned into minority shareholders, managed to attract larger shareholders to their side and brought three of their representatives to the EXXON MOBIL Board of Directors, who, with 25% of the Board votes, intend to influence decisions

that define investments in production of oil and gas.

As a result, **energy companies assess some challenges** (for example, a shrinking resource base, rising costs, changing demand), **but have to deal with completely different risks, including legal ones that threaten the very existence of companies.**

A fair question arises. If companies are already voluntarily committing to and developing strategies to reduce emissions and improve energy efficiency, and those strategies are supported by the majority of shareholders, **what is the real purpose of lawsuits that destroy corporate law and thereby violate shareholder ownership and rights to the results of their investments?**

The rules of corporate law and the actions of stock exchange regulators allow companies to defend themselves against certain shareholder actions if they might result in value destruction. But now **we are faced with completely new methods of shareholder and activist pressure on companies when, formally acting under the rules of corporate law, some shareholders pursue their own policies, jeopardizing the position of investors, partners, employees, and customers. This situation requires additional legal analysis and design of protective measures.**

Since the beginning of this year, we have witnessed a sharp increase in gas prices in Europe, mainly associated with **overconfidence in the reliability of alternative generation.**

However, recent events show that the stability of wind power is overestimated. Climatologists estimate that **wind strength in Europe in September and October of this year was 15% below historical levels,** which has had a negative impact on wind power generation.

Overconfidence in the reliability of wind generation was one of the reasons that led to insufficient gas reserves in storages. And only **as winter approached did our European partners begin to think seriously about the risks, about the real unreadiness of renewable generation (at the current level of technology development) to ensure stable energy**

supplies. All this led to record high gas prices, which since the beginning of this year have increased fivefold and now threaten the long-term economic recovery of Europe.

Unsynchronization of the pace of commissioning of capacity of renewable energy and the shortage of backup capacity, along with the accelerated abandonment of conventional energy also **contributed to the worsening of the situation.**

However, the "molecules of freedom" that the previous U.S. administration widely advertised as what the American gas will bring to Europe are not reaching the European continent in sufficient quantities. In the first 7 months of this year, U.S. LNG shipments to Europe were up 47% over the entire pre-crisis 2019 level, but shipments to Asia Pacific countries were up 2.6 times in the same period. As we can see, the political and economic priorities of the U.S. differ: while **promising to significantly increase gas supplies to Europe, in reality the U.S. primarily increases them in a completely different direction.**

As a result, the price of gas in Europe has reached \$200 per barrel in oil equivalent, which is more than twice as high as the price of oil. Not only generating companies, but also industry regulators are faced with a dilemma. On the one hand, **it is necessary to ensure reliable energy supplies,** and on the other hand, the European Union has **voluntarily made commitments to reduce greenhouse gas emissions** by phasing out coal and oil (fuel oil) generation.

A similar dilemma arose in China: the country had previously planned to reduce coal consumption to achieve long-term climate goals, but the recent instructions of the country's leadership to ensure energy supplies at any price has already led to a sharp increase in coal prices - while in Europe the cost of coal since early September rose by about 50%, in China it has almost doubled.

According to the estimates of Citi and Goldman Sachs, **super-high natural gas prices may cause an additional demand for oil of up to 1**

million barrels a day, which will give an impulse to create an imbalance similar to that of gas **and "heat up" oil prices even more.**

When it comes to additional oil demand, attention is often drawn to the countries participating in the OPEC+ agreement. And there are almost always accusations that OPEC+ countries are manipulating the market because they are overperforming their commitments. However, a number of OPEC+ countries are unable to increase production because of unilateral sanctions, and some countries do not have enough investments to do so. Also, the pressure from climate activists stops execution of joint international projects which makes the majors **cut investments in production of oil and gas**, diverting funds to renewable energy industry. It is the **climate agenda that is now putting pressure on the global oil and gas market.**

The risks posed by abandoning oil, as well as low-carbon gas generation and coal, must be fairly assessed.

The forced return to coal to guarantee the stability of power generation **makes us rethink not only the timing, but also the need for the declared complete abandonment of traditional generation.**

2. Ambivalence of decarbonization processes

First of all, we need to answer the question - what problems are we trying to solve with an accelerated energy transition? And will low-carbon solutions really help provide energy for future generations?

The question of what kind of energy is "green" or "low-carbon" is also important. After the 2011 accident in Fukushima, Japan, which was caused by faulty design because the reactor safety circuits were not designed for tsunami risks, negative public opinion has led to stronger demands to phase out nuclear power completely, even though engineering improvements in reactor design and protection measures have been stepped up. As a result, in 2020, compared to 2011, energy production from nuclear power plants was down 27% in the United Kingdom and 41% in Germany.

Even in France, where nuclear power plants represent two-thirds of the total electricity production, the volume of nuclear power plants decreased by 20%.

The gas crisis has led **some European countries to rethink their low-carbon goals**: in early October, at the initiative of France, the 10 European Union countries with an average of 46 percent of their electricity production from nuclear power plants (compared with an EU average of 25 percent) appealed to the European Commission **to recognize nuclear power as low-carbon**. However, we should remember that **nuclear fuel also needs to be disposed, which is more expensive and requires special technologies, because the environmental risks here are much more serious**.

It is necessary to take a comprehensive approach to assessing the safety of energy resources for people and the environment along the entire process chain. In the case of hydrogen, for example, which has been given great hopes as a promising "green" fuel of the future, we should not forget that it is its explosive nature that has caused a number of disasters in the nuclear power industry and at chemical production facilities.

Even hydropower, which is virtually emission-free, can have a significant negative impact on the environment, since it requires the construction of water reservoirs, which leads to the destruction of ecosystems by flooding arable land and forests.

Wind and solar plants also require significant areas to be taken out of circulation, and **if there is a plaintiff who sues wind generation, there could be an absurd situation of total bans**.

The development of renewable energy technology has helped lower the cost of generation, which has helped it strive to be competitive with conventional power. However, this trend could be reversed now.

For example, compared with pre-crisis levels in 2019, the cost of polysilicon, a key raw material for the production of solar panels, has increased **by 4 times**.

Since early 2019 prices for manganese, lithium, and the rare-earth element neodymium required for batteries have also more than doubled.

Not only are the prices of the metals and elements needed for the energy transition rising, but so are the prices of metals in general as the global economy recovers faster than expected.

Production of metals and other materials required for low-carbon energy is often accompanied by high carbon emissions from extraction and processing. Moreover, according to information of agencies this is done using child labor.

According to the International Energy Agency, the greenhouse gas emissions from lithium production are **three times greater than those from steel smelting**. Nickel and aluminum have 7-8 times the emissions of steel, and rare-earth metals have 50 times the emissions of steel.

In order to provide the world with such important metals, resources **with worse** characteristics have to be developed. As a result, the International Energy Agency estimates that **the greenhouse gas emissions from lithium production in future projects could be 3 to 4 times higher than for current projects, and 6 times higher for future nickel production projects.**

It is no secret that in the common perception the development of renewable energy is seen as a one-time investment in an environmentally friendly energy source, which can serve for a very long time - 40-60 years, as traditional energy facilities, or even longer. But in reality, the service life of wind farms is only about 20 years.

Given that wind generation began to spread quite widely in the early 2000s, there is already a need to replace the wind turbines installed back then.

The dirty legacy of green energy that humanity is leaving to future generations is growing rapidly. If in 2020 about 40 thousand tons of decommissioned blades all over the world needed to be recycled, by 2025

their number will increase to 100 thousand tons per year, and with the further spread of wind generation and end of service life of the units that were commissioned earlier will grow further.

Similar problems arise in the case of solar panels, the actual service life of which is much shorter than the 30 years expected by the industry, because as they age their capacity decreases twice as fast compared to statements made earlier which further reduces their effective service life. In 2035, the number of solar panels that will have to be recycled will be 2.6 times higher versus the number of new ones that will be sold. **Due to the high content of heavy metals, solar panels are toxic and require specialized recycling, which is 10-30 times more expensive than sending them to landfill.**

All these facts should make supporters of the energy transition **think about the true impact that low-carbon energy has on nature and the climate, and about whether such energy can fully become truly clean and "green".**

3. Energy transition is possible only with stable energy supplies and development of new materials and technologies

Climate activists should be reminded that **forcing companies to withdraw from oil and gas projects does not solve the problem of reducing emissions.**

Moreover, **achieving carbon-neutrality goals does not require a complete phase-out not only of oil and gas, but also of coal.**

The belief in the limitless possibilities of renewable energy is not yet supported by reliable technology. We need research and the search for new materials that are less energy intensive and toxic and that can be used to produce and store energy and replace current ones.

The development of new materials is no longer a matter of energy industry, but a much more serious matter of changing the structure of the economy. In fact, despite the variety of plans for achieving carbon

neutrality, **without serious development of new technologies and materials, the energy transition will remain a vain dream.**

Even in the long term, renewable energy will not be able to **completely replace conventional energy sources.** This year, the International Energy Agency published a low-carbon forecast that caused a wide public response and that assumes carbon neutrality by 2050 and an end to investment in new oil and gas projects now. But even in this projection, conventional energy resources in 2050 will collectively meet 39% of global demand.

One of the key drivers of global oil demand growth in the long term will be India. According to the forecast of the Indian Oil and Gas Ministry, the oil consumption in India will double by 2050 (up to 452 million tons or 9 million barrels per day). Oil will account for 1/5 (22%) of the country's energy consumption. It is necessary to make decisions now that will ensure that future demand is met. **Otherwise, we will face new larger shortages and rising prices.**

Of course, there are objective factors to reduce oil consumption in the future. **Companies are working on technology and the efficiency of green projects, and we are seeing a surge in investment in their development. But consumers also need to re-align their behavioral preferences.**

According to the IEA outlook the behavioral changes will make it possible to reduce carbon emissions by 2 bln tons as early as 2030. This can be achieved by replacing flights that are shorter than one hour with other types of transportation, reduction of speed of vehicles by 7 km/h, work from home, more rational heating of buildings and the use of ride sharing.

Climate pressure is already impacting the energy industry. While the world's leading oil and gas companies invested an average of \$16 billion per year in exploration between 2011 and 2015, last year **spending on hydrocarbon reserves replacement dropped threefold**, to \$5 billion. As a result, the level of global oil and gas reserves replacement has been

declining for the fourth year in a row, and **risks of supply shortages are already factored into the prices**, negatively affecting revenues of European and global consumers.

Given the uncertainty regarding long-term demand and oil prices, a significant number of oil and gas companies are not planning to increase investments. As a result, global investment in oil and gas projects in 2021 will be twice lower than in 2014. Given the decline in production at the existing fields, investments in the development of new reserves are required. Based on current project trends, the cumulative shortfall in investment needed to meet oil demand between 2021 and 2025 could be \$135 billion.

If investment remains at current levels, **by 2030, the total shortage will reach \$600 billion, according to J.P. MORGAN Bank estimates.** Insufficient investment already poses risks to the stability of long-term supply to meet the oil and gas demand.

The energy transition must be based not on the demands of climate activists, but on real economic patterns, providing a return on investment and long-term value growth while meeting energy demand and reducing emissions.

4. Who will gain advantages from the energy transition?

Current trends in the redistribution of roles in the low-carbon market are of strategic importance. Importantly, it is the **actions of a government during the energy transition that not only establish current competitive advantages, but also create opportunities for energy market dominance in the future.**

The International Energy Agency estimates that the **energy transition and the associated growth in demand for electric vehicles over the next 20 years will lead to a 133-fold increase in demand for lithium, a 33-fold increase in demand for cobalt, and a 30-fold increase in demand for nickel.**

The growing demand for rare-earth and base metals is not only related

to batteries, but also to other components for electric cars. For example, electric car engines, which provide the longest mileage from a single charge, use magnets made of the neodymium alloy. Demand for this metal is growing and the price of neodymium oxide has increased by 90% over the past year. Production facilities for neodymium magnets are almost entirely located in China, which can not help but cause concern in some countries about growing economic dependence.

This is pushing both individual companies and entire countries **to realize the need to build their own secure supply chains in terms of metals.**

In June of this year, the U.S. Administration published a report in which it had to admit that even such a powerful and technologically advanced economy as the United States is losing competition to the European Union in creating incentives for the establishment of sustainable supply chains and localization of production of electric cars and batteries, and it loses to Taiwan and other Asia-Pacific countries in creating incentives for the development of semiconductor production.

It is possible that to ensure guaranteed access to these resources, **the U.S. may again resort to political pressure tools.**

The need for huge investments in "new energy" leads to higher energy prices for end users. The introduction of carbon taxes on conventional energy resources will also cause energy prices to continue to rise.

This year's gas crisis illustrated how a **shortage of one energy resource can affect the price and balance of the entire energy industry.**

Discouraging conventional energy reduces the investment needed to keep up with conventional energy production, which will cause shortages and drive prices even higher.

To prevent the global economy from slipping into such an energy "inflation spiral," approaches to changing the structure of global energy industry **must be balanced.**

High energy prices will undoubtedly slow economic growth, and the era of relatively low energy prices, which lasted almost 100 years and was a major incentive for the development of the world economy, may come to an end.

Globalization has led to sweeping changes affecting all countries, and the new trends in developed nations are affecting the Third World, whose populations, deprived of basic energy sources, are at risk of disease and death.

Having built their prosperity over previous decades on inexpensive fossil-fuel energy, developed countries are now effectively preventing developing countries from doing the same, forcing them to switch to expensive alternative generation, which only exacerbates social inequality.

It would be unfair if the largest energy- and metal-consuming countries continued to exert pressure on developing countries with their enormous natural potential.

More expensive loans for developing countries and the additional restrictions often applied to them constrain their ability to develop, increasing the load of their obligations and reducing the number of tools for implementing the energy transition. This increases the risk where developing countries will remain in energy and economic poverty.

The Earth's climate has never been static, and **even if we achieve our carbon-neutral goals by 2050, humanity will still face changes.** Decisions about actions beyond the 2050 horizon must be made now and we must prepare for the larger changes associated with the energy transition.

The vision of the economy of the future will allow us to shape the energy of the future adequately. However, the costs and efforts to create such energy industry must be adequately distributed between energy producers and consumers.

5. Response to climate challenges

Man-caused impacts occur not only due to the burning of fossil

fuels, but also because of the expanding geography of agriculture, animal breeding and other factors. With the development of agriculture and industry in the 19th century, the concentration of carbon dioxide in the atmosphere began to rise steadily, rising by now by more than 50% compared to the pre-industrial era. Natural sinks are incapable of fully absorbing these additional volumes, with deforestation reducing the potential for natural carbon capture.

Additionally, this **potential is reduced by forest fires, whose global emissions amount to 8 billion tons of CO₂ equivalent annually, comparable to the emissions of all industry.**

The key to carbon management and the most affordable way to offset carbon emissions is reforestation. Experts estimate that the Earth's ecosystems could support 900 million more hectares of forests, equivalent to a quarter of today's forests. Five hundred billion new trees could capture about 200 billion tons of CO₂ equivalent over their lifetime, offsetting half of humanity's emissions over the past 60 years.

In this regard, Russia pays special attention to reforestation, recreating about one million hectares of forest annually. This is especially important, given that the country has enormous potential for the natural absorption of carbon emissions. Russia is already making a significant contribution to absorbing carbon dioxide in ecosystems, including forests, whose carbon capture potential is estimated at 2.5 billion tons per year.

In addition, the Russian Federation has considerable offset potential due to the opportunities for storage of carbon in depleted oil and gas fields and salt formations. **According to industry experts, the geological storage potential is about 1.7 trillion tons of CO₂.**

The use of such offsetting measures is being considered by Rosneft as part of the Carbon Management Plan through 2035 that was approved last year. **This plan sets a number of ambitious decarbonization targets: the Company is committed to reduce its upstream emissions intensity by 30%, prevent 20 million tons of greenhouse gas emissions, reduce**

methane emissions intensity, and ensure zero routine flaring of associated gas.

At the same time we are assessing the prospects for a wide range of carbon management opportunities, including the use of renewable energy sources and carbon dioxide capture technologies, and development of hydrogen business.

Rosneft is already actively ramping up production of the cleanest fossil fuel - natural gas. We plan to increase its share in production to over 25%. Our company is implementing a program for utilization of associated petroleum gas, developing environmentally friendly motor fuels and a network for charging electric cars at our filling stations.

We are currently developing a new Company strategy, the main priorities of which will be adaptation to the challenges of the energy transition and integration of the "green agenda" into the business.

Our efforts do not go unnoticed - Rosneft holds leading positions in a number of specialized ratings by reputable international agencies and continues to improve them.

Thus, during three past years Rosneft improved its energy efficiency **by 15% which allowed to prevent emissions of 4 mln tons of CO2 equivalent. Rosneft's energy intensity numbers are 40% lower** than those of a number of the world's largest oil companies.

Equally important to us is the well-being of the environment and preserving its quality for future generations. Last year Rosneft's **green investments exceeded \$580 million**, and atmospheric pollutants emissions reduced by 14%. Also, **to fight the climate change, the Company annually plants new trees.** In 2021 the number of trees that were planted came to more than 9.3 million.

At the same time, we make every effort to ensure the stability of hydrocarbon supply in the future, and the most important project for this is Vostok Oil.

The use of advanced technologies for environmental protection from the well drilling stage to the specialized design of oil pipelines and tankers that will export the oil will ensure that the project has a carbon footprint 75% lower than that of other major new oil projects in the world.

Company's performance has been recognized by the shareholders. Over the past 5 years [from October 2016 to October 2021], the Company's total shareholder return has almost doubled (90.9% growth), while for the world's leading oil and gas companies this indicator was 5 times lower, around 20%.

Finishing my presentation I would like to mention once again **the most important tasks of today's energy industry: meeting humanity's growing demand for energy, guaranteeing reliable supplies, and environmental responsibility.**

The environmental and climate agendas come to the fore, but they must not undermine the humankind's energy security or create risks of slowing down the social and economic development.

The gas crisis has again clearly demonstrated the multi-component and complex nature of the energy industry and economy and the fragility of many well-established systems, and that **some new technologies are not yet sufficiently developed to be relied upon safely.**

So I want to **reiterate that the energy transition process must be balanced, economically sound and socially responsible.**

The global community must develop a unified approach to the global climate issue and promote the development and sharing of emission-reduction technologies, rather than looking for faults or using unilateral protectionist measures that widen the already large gap in energy supply between developed and developing countries.

Despite the undeniable importance of addressing environmental issues, responsibility for greenhouse gas emissions is often (and wrongly!) placed on primary energy producers rather than on polluting industries.

It is important that the ongoing **stimulation of green energy does not replace its real economic efficiency and takes into account emissions along the entire chain**, from metal production to recycling of wind and solar farm equipment, batteries and electric cars.

Only a **reasonable balance between traditional and renewable energy** can ensure sustainable long-term growth of the global economy.

I am convinced that **all players in the global energy industry need to work constructively to reduce the carbon footprint**, take a balanced and professional approach to the energy transition, improve environmental efficiency and ensure not only reliability, but also flexibility in providing consumers with energy resources.

Energy projects are capital-intensive and long-term regardless of the type of energy resources that are developed. And the choices we make now will determine the future of the global energy industry for decades to come.

I am inviting my colleagues to share their views on the future of the global energy industry, the challenges that it faces, and the opportunities that are in store for us.

Thank you for your attention!