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The Green Economy in Market-Oriented Countries: The Case of Kazakhstan

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Abstract:

A social market economy is predicated on the principle that sustainable development is possible only if there is a solid focus on key economic, social, and environmental issues. The purpose of the research reported in this paper is to explore the outcomes of market reforms related to the shift to a green economy in the Republic of Kazakhstan.

The findings from the authors' study indicate that today the Kazakh economy is one of the world's most energy-intensive economies, which is due to the use of outmoded infrastructure, technology, and standards, most of which were inherited from as early as the Soviet period. As a result of its market reforms, Kazakhstan has experienced tangible economic growth, but the nation's environmental indicators remain a serious concern in relation to the health of its citizens. In the Environmental Performance Index (EPI), Kazakhstan has fallen far behind not only most developed market-oriented countries but some of the developing nations that used to be part of the former Soviet Union as well, like Russia, Belarus, Armenia, Turkmenistan, and others.

To galvanize the process of shifting to a "green" economy in the Republic of Kazakhstan, it may help to implement some of the new instruments that have been employed as part of environmental policy in certain market-oriented countries and have proven to be efficient. These instruments and approaches include environmental taxes and levies, permit trading systems, deposit return systems, environmentally motivated subsidies, and organizations and enterprises displaying a willing, voluntary attitude toward improving their environmental performance.

Keywords: green economy; green growth; sustainable development; environmental efficiency; economic growth; environmental policy; market instruments

JEL Classification: Q50; Q57.

Introduction

In any country, economic development is a necessary condition, but it is not sufficient for reducing poverty and improving living conditions. Back in the mid-20th century, many Western nations embraced the model of a social market economy. Although initially the model of a social market economy emerged in an attempt to tie the principles of a free market in with social equality, presently the model has been expanded to incorporate another element – environmental sustainability, which is one of the key conditions for long-term sustainable development.

Industrially developed countries, including the G7 nations (Canada, France, Germany, Italy, Japan, the UK, and the US), as well as the Eurozone nations and the new industrial nations (Hong Kong, South Korea, Singapore, Taiwan, Argentina, and others), are increasingly becoming the source of global economic growth, emissions, and, along with that, more intensive use of natural resources. Countries with a fledging market economy, such as the Republic of Kazakhstan, may need to attach special importance to potential economic and social consequences from environmental degradation. These nations are most vulnerable to climate change, and are, normally, dependent to a greater degree than countries with a developed market on the use of natural resources for economic growth. In addition, certain nations in Central and Western Africa, specifically the Central African Republic, the Democratic Republic of the Congo, Somalia, Sudan, South Sudan, and some other countries, have been faced with serious economic, social, and environmental challenges due to shortages of power, food, and water on account of climate change and extreme weather risks. These nations have also been faced with an increased risk of premature death due to pollution, low-quality water, and diseases caused by climate change.

In the last decade, the concept of a "green" economy has become a strategic priority for many nations, including such member states within the Eurasian Economic Union (EAEU) as Kazakhstan, Belarus, Armenia, and Kyrgyzstan. At the same time, the latest research indicates that progress in the area of "green" growth and sustainable development is still quite slow at the moment (Organisation for Economic Co-operation and Development, 2017).

The Republic of Kazakhstan has taken on obligations to pursue "green" growth and is currently shifting away from the use of cheap energy and trying to remediate the chronic environmental disrepair inherited from the era of centralized planning (Onyusheva, Ushakov and Van 2018). In shifting to a market economy, Kazakhstan has achieved significant declines in emissions, but its economy remains much less eco-friendly than that of other nations with medium income levels. The increased significance of extractive industries to growth in Kazakhstan, coupled with outmoded technologies and productivity standards, poor resource diversification, and a limited environment for investment oriented toward the market, are impeding the shift to a "green" economy.

To resolve its environmental issues, the nation may need to take appropriate "green" measures as part of its economic policy (*e.g.,* giving up energy subsidies, introducing environmental taxes, providing subsidies for the development of markets for eco-friendly products, issuing "green" debt instruments, etc.) and putting in place relevant institutions that will facilitate investing in environmentally safe production.

1. Literature review

In the context of galvanizing efforts aimed at achieving sustainable development, in recent years there has been an increased research focus on the following two interrelated concepts: the "green" economy and "green" growth. This is not an exhaustive roster of approaches, models, and instruments proposed to help achieve sustainable development but rather a subset of approaches that in recent years have entered wide use in the context of international negotiations and among influential international organizations (D'Amato *et al.* 2017)

The concept of a green economy is not a novel one. It was first proposed by the London Environmental Economics Centre (LEEC) in a publication entitled 'Blueprint for a Sustainable Economy', written in 1989 by scholars D. Pearce, A. Markandya, and E. Barbier (1989).

The literature dealing with "green" growth currently offers hardly any universally accepted definition for the term 'green economy'. The widest use has been made of the one proposed by the United Nations Environment Programme (UNEP) – "one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities" (United Nations Environment Programme 2011).

Considering the fact that a "green" economy is not intended to replace sustainable development but *is* to serve as an instrument for achieving it, the UNEP's definition maintains the focus on the three key aspects of sustainable development – economic, environmental, and social sustainability (Hu and Zhou 2014). Today's growing focus on the green economy is associated with that, starting after the year 2008, achieving sustainability has rested "almost entirely on getting the economy right". The UNEP has noted that "decades of creating new wealth through a "brown economy" model have not substantially addressed social marginalization and resource depletion" (United Nations Environment Programme 2011). They have failed to ensure either some real investments or "green" jobs. The UNEP's definition covers all of the above aspects.

In addition, many other terms are focused on specific varieties of the "green" economy, like an economy based on human rights (Orihuela 2017; Neimark and Vermeylen 2017), an economy based on holistic growth (Ishak, Jamaludin and Abu 2017; Tsui, Wu and Siu 2015), an inclusive economy (Ivanescu and Sorlescu 2016; Aly and Managi 2018), an environmentally responsible economy (Anfinogentova, Dudin, Lyasnikov and

Protsenko 2017), a cyclical economy (Kirchherr, Reike and Hekkert 2017), a circular economy (Geissdoerfer, Savaget, Bocken and Hultink 2017; Pomponi and Moncaster 2017), and a sustainable economy (Stoever and Weche 2018).

Irrespective of which definition is adopted and which approaches to ecologizing the economy are taken, there are a set of common characteristics and principles that have overriding significance to ensuring the required shift from the brown economy to the economy of the future (the "green" economy). The term 'brown economy' implies an industrial economy that is predicated on the use of mineral resources and does not factor in environmental issues.

Among the common characteristics of the "green" economy in any country are employing low-carbon energy; reducing pollution and greenhouse gas emissions; making efficient use of resources; minimizing the loss of ecosystem services and biodiversity (Whitehouse 2017)

When it comes to policy instruments, the "green" economy is maintained through the use of market instruments and minimization of harmful subsidies, as well as government investment aimed at ecologizing the economy (López 2018). In addition, the green economy ought to be socially inclusive and rely on values-oriented economics. In other words, the "green" economy is aimed at stimulating new growth that is based on value through incorporating into the growth process more social and environmental considerations (Gbededo and Liyanage 2018).

The shift to a "green" economy, which puts economics at the heart of sustainable development, may require of all nations major structural and technological transformations across the entire economy – or, at least, a focus on "greening" such key sectors as energy development, urban infrastructure, transportation, industry, and agriculture (Teimouri and Yigitcanlar 2018). It will also include the "ecologization" of investment at the national and global levels, creation of "green" jobs via new "green" sectors, and support and facilitation of "green" trade at the international level though national and international policies (Wanda *et al*. 2017).

Thus, the shift to a "green" economy requires combining investment instruments and social/political instruments of administration. For instance, this could be investing in the development of a national energy program and implementing a social/economic policy in the country. A social/economic policy may incorporate a number of areas, such as: (1) employing relevant market instruments, like instituting subsidies and reducing taxes for enterprises taking part in the development of the national energy program; (2) employing relevant legal instruments, including environmental and energy-related legislation; (3) developing a relevant government policy that, for instance, would give priority in government procurement and in management of land-use and the country's bio-resources to enterprises taking part in the national program on the development of the national "green" economy; (4) developing relevant information media programs and information and awareness raising campaigns via the various channels of communication with the population.

2. Methods

This work is based on data from a bibliometric analysis of research publications. The literature was explored in the Scopus, Google, and Google Scholar databases using "green economy" as a keyword in document titles, keywords, or summaries. The search helped retrieve a relevant body of both research and nonacademic literature (reports from nongovernmental organizations and companies, policy documents, etc.).

The sources are dominated by thematic global research, which includes such items as the Green Economy Barometer, 'Green Economy: Europe's Environment: An Assessment of Assessments', the Global Green Economy Index (GGEI), as well as a body of research that describes the development of the "green" economy in certain market-oriented countries and in the Republic of Kazakhstan.

The study's practical part is built on a comparative analysis of the situation in the Republic of Kazakhstan and certain market-oriented countries across such indicators as GDP energy intensity, CO_2 emissions per unit of GDP, and the Environmental Performance Index (EPI).

The EPI reflects the amount of tension between two fundamental aspects of sustainable development: (1) the health of the environment, which will improve with economic growth and prosperity, and (2) the viability of an ecosystem that is subjected to strains from industrialization and urbanization. Good management is a critical factor that is crucial to balancing these different aspects of sustainability out.

3. Results

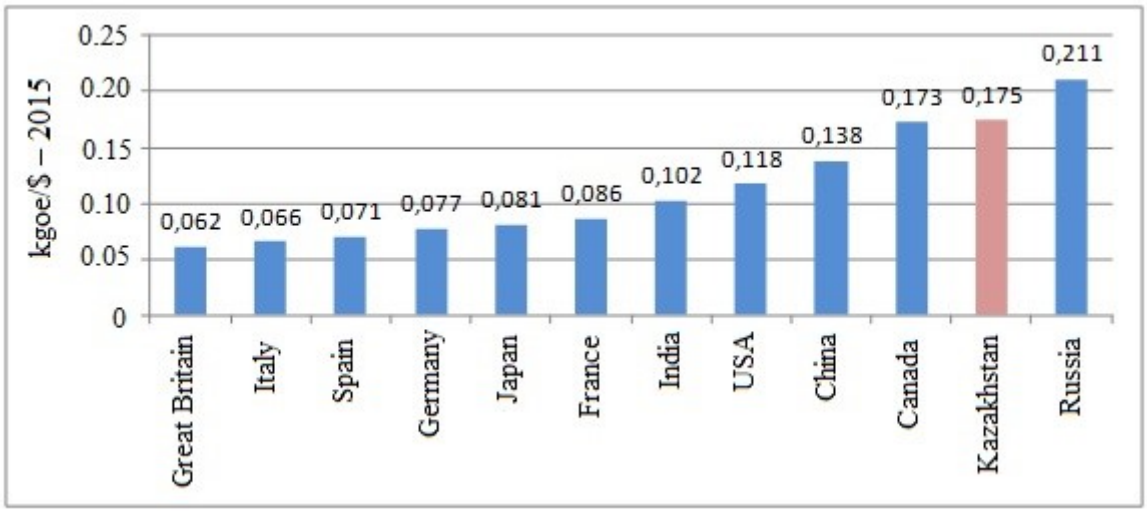
The current stage in the development of Kazakhstan emerged at a time when the world economy itself was going through a major change. The period from 1991 onwards has witnessed the swiftly accelerating pace of

globalization, characterized by financial and economic integration and the unprecedented development of global value chains.

In 2000, Kazakhstan started to enjoy a sharp acceleration in GDP growth, the figure reaching an average of 9.4% in the period 2000–2008. This growth was mainly associated with input from the nation's extractive industries – above all, those involved with hydrocarbons and metals. This has made Kazakhstan extremely vulnerable to external shocks. The nation's dependence on resources is also causing its poor environmental performance, which in part is due to outmoded infrastructure, technologies, standards, and practices, most of which were inherited from the Soviet period.

Today, Kazakhstan is one of the world's most energy-intensive economies, the energy intensity of GDP in Kazakhstan being 2.8 times the figure in the UK, 2.3 times the one in Germany, and 1.5 times the one in the US (Figure 1).

Figure 1. The energy intensity of GDP in the Republic of Kazakhstan and other countries in 2017. Compiled by the author based on data from the 2018 World Energy Statistics Yearbook (Enerdata, 2018)



The prevalence of extractive sectors in Kazakhstan and its high levels of energy intensity have had a serious impact on the quality of its soil, water, and air. Its CO_2 emissions per unit of GDP are nearly 12 times the figure in France and 9.8 times the one in the UK (Table 1).

Table 1. CO_2 Emissions per Unit of GDP

Country	CO_2 emissions, million tons per year	GDP, million US dollars	CO_2 emissions, tons per thousand US dollars of GDP
UK	406.4	2,650,850.18	0.15
Italy	336.9	1,859,383.61	0.18
Spain	282.4	1,237,255.02	0.23
Germany	760,8	3,477,796.27	0.22
Japan	1,191.2	4,949,273.34	0.24
France	316	2,465,134.3	0.13
India	2,271.1	2,274,229.71	1.00
US	5,350.4	18,624,475	0.29
China	9,123	11,190,992.55	0.82
Canada	527.4	1,535,767.74	0.34
Kazakhstan	207.2	137,278.32	1.51
Russia	1,490.1	1,284,727.6	1.16

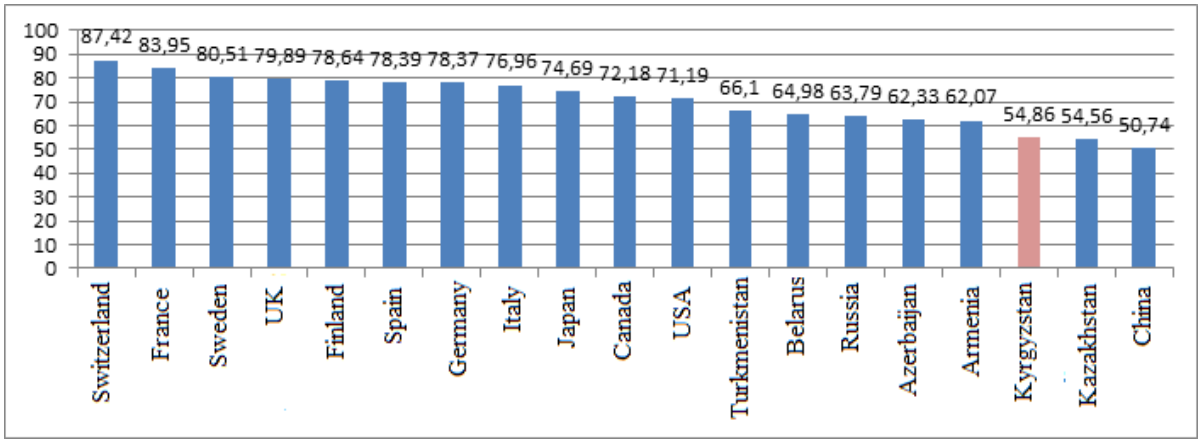
Air pollution is especially grave in major urban areas, like Almaty and Astana. As a consequence of industrial activity and declines in the quality of the environment, poor air quality is resulting in increased morbidity among the population, becoming a serious concern in healthcare. More specifically, in the period 2012–2016, the number of sick people in the Republic of Kazakhstan rose 9.0%, with neoplasm incidence increasing 36% and the number of patients with congenital malformations (developmental disorders), deformities, and chromosomal abnormalities growing nearly 48% (Table 2).

Table 2. Dynamics of Morbidity in Kazakhstan in the Period 2012–2016

Disorder groups	2012	2013	2014	2015	2016	Change, 2016/2012, %
Neoplasms	81.3	81.3	86.2	98.8	110.6	136.0%
Blood circulatory system diseases	412.1	419.6	414.0	426.3	461.3	111.9%
Respiratory system diseases	3,851.3	3,843.4	3,729.8	3,863.0	4,396.2	114.1%
Congenital malformations (developmental disorders), deformities, and chromosomal abnormalities	37.8	36.7	39.1	52.8	55.9	147.9%

In the EPI, the Republic of Kazakhstan is ranked 101st among 180 nations, behind not only countries with a developed market economy but also a number of developing nations, including Russia, Turkmenistan, Azerbaijan, Armenia, and Belarus (Figure 2).

Figure 2. The 2018 rankings of countries according to the EPI (2018 EPI Results, 2018).



At the same time, Kazakhstan stays true to its embrace of the national and international focus on achieving ambitious environmental objectives in the path to long-term sustainable growth. The Kazakh government has taken a number of measures to enhance the regulatory/legal framework with a focus on employing renewable resources, boosting energy efficiency, and reducing greenhouse gas (GG) emissions. For instance, to resolve issues related to climate change and sustainable development, the government has signed into law a number of relevant statutes, including the Environmental Code of the Republic of Kazakhstan, the Concept on the Shift to a Green Economy, the Law on Energy Conservation and Energy Efficiency, and the Law on Support for the Use of Renewable Sources of Energy. At the moment, Kazakhstan is overhauling its quota trading system. On January 1, 2018, the Kazakh government brought into effect a new national plan for allocating quotas for greenhouse gas emissions for the period 2018–2020 (*Resolution of the Government of the Republic of Kazakhstan No. 873,* 2017).

The set of measures proposed under the Concept on the Shift to a Green Economy incorporates a set of priority areas, including sustainable use of water resources; development of sustainable and highly productive agriculture; energy conservation and boosting energy efficiency; development of electrical power engineering; waste management; reducing air pollution; conservation and efficient management of ecosystems.

According to the National Report of the Republic of Kazakhstan on the Shift to a Green Economy, in the period 2013–2016 the nation achieved the following results on the first area – sustainable use of water resources (Table 3):

Table 3. Sustainable Use of Water Resources

Indicator	2013	2014	2015	2016
Share of water users with continual access to the system of central potable water supply in cities	85	86	87	88
Share of water users with continual access to the system of central potable water supply in rural areas	47.7	50.3	51.5	52.3

The share of water users with continual access to the system of central potable water supply increased in cities from from 85% to 88% and in rural areas from 11% to 52.3%.

In terms of activities on developing sustainable and highly productive agriculture in the Republic of Kazakhstan, in the period 2014–2016 overall labor productivity in agriculture rose nearly 2.5 times, with grain crop yield increasing nearly 15%.

Table 4. Development of Sustainable and Highly Productive Agriculture

Indicator	2013	2014	2015	2016
Labor productivity in agriculture, thousand tenge per person	781.8	1,070.2	1,239.8	1,544.5
Wheat yield, tons per hectare	1.08	1.09	1.19	1.21
Amount of water used for irrigation, m^3 per ton	1,589	1,280	1,278	1,186

The nation's improved grain crop yield indicators are the result of implementation of water- and resource-saving technologies across most of the farmland. In 2016, Kazakhstan employed zero soil treatment technology across an area of 3.0 million ha and resource-saving technology across an area of 12.6 million, which constitutes over 84% of the entire area under grain crops. To compare, in 2013 the figure was 78%. Employing water-saving technology facilitated an increase of 1.5 times in water resource productivity. However, despite the measures taken, the total amounts of water used for irrigation purposes remain significant, exceeding the 2020 target by nearly double (1186 m^3/ton of agricultural output in 2016).

To reduce harmful pollutant emissions at central thermal power enterprises, the government carried out in the period 2014–2016 a stage-by-stage replacement of dust-collecting plants with a stack gas cleaning degree of up to 97.5% with second-generation battery emulsifiers with an efficiency of 99.3%, which has helped reduce solid particle emissions by 70–80% and limit sulfur oxides by 10%.

To follow through on its obligations on reducing greenhouse gas emissions, Kazakhstan has put in place a pilot emissions trading system (KazETS), as well as a set of regulatory instruments, under which emissions from sectors with the greatest volumes of emissions will be limited and available for trading. Nearly half of the nation's greenhouse gas emissions are produced by the oil, gas, power, mining, and chemical sectors and are included in the KazETS. Currently, limitations are imposed only on CO_2 emissions, but there is discussion going on regarding the inclusion of methane and other greenhouse gases into the scheme. It may be possible to achieve additional progress in mitigating the effects of greenhouse gas emissions as part of the KazETS through implementing additional statutory reforms and working with relevant interested parties to fine-tune the rules.

Thus, the findings attest to some systematic work being carried out by Kazakhstan's federal and local authorities in an effort to facilitate the nation's shift to a "green" economy. At the same time, despite the tangible headway achieved in the area, there is still much to be done in terms of implementing the nation's "green" reforms, attracting investment into this, and designing proper measures to help drive "green" growth.

4. Discussion

Kazakhstan has set itself a set of ambitious objectives aimed at achieving robust, "green", and inclusive growth. The nation has plans to make it into the top 30 most developed countries of the world by shifting from resource-intensive to cleaner, more innovative, and more diversified development. To achieve these objectives, the nation will need additional substantial reforms to enhance public administration, boost economic openness and competitiveness, facilitate more eco-friendly growth, and ensure more equal access to education, employment, and economic opportunities.

One of the more efficient and effective ways to promote "green" growth in the Republic of Kazakhstan is to make wider use of relevant market instruments for stimulating "green" growth, like environmental taxes, levies, and duties, permit trading, deposit return systems, and subsidies.

At the moment, Kazakhstan is using its environmental legislation only as an instrument for replenishing the budget, with most funds obtained failing to be used as intended for environmental protection and renovation activities (Timur Kulibaev 2018).

The Kazakh government may find it useful to explore the experience of Belarus and Russia, which have addressed the issue at the legislative level and have in place a mechanism for economic stimulation of environmental protection activities, which involves reimbursing one for such costs through environmental taxes.

The Republic of Belarus levies environmental tax on enterprises that exploit natural resources and entities whose activity pollutes the environment. The legislation prescribes a set of rates on environmental tax. Depending on the object of taxation, there are different fixed rates for polluting substance emissions released into the atmosphere, wastewater discharges, and industrial waste storage and elimination. Environmental tax amounts may be reduced quarterly based on investment in construction or renovation activities, *e.g.* those associated with gas-cleaning units, units designed for removing polluting substances from wastewater, waste treatment, storage or burial facilities, etc.

The Russian Federation pursues a policy of subtracting from the total payment for negative impact on the environment the actual amount expended on environmental protection activities. Plus, there is government support for enterprises in the form of tax concessions and investment tax credits, allocated out of the federal budget and the budgets of Russia's constituent regions.

Support for the sustainable development and protection of the environment, including from excessive consumption waste, is among the key principles of the World Trade Organization (WTO), which Kazakhstan joined in 2015. At the moment, many counties are employing programs for mandatory waste elimination, and Kazakhstan is no exception. In January 2016, the Republic of Kazakhstan introduced a special waste collection system intended to expand the potential for processing industrial waste such as outmoded vehicles, parts, and technical fluids. At the same time, the situation in the area of solid waste disposal in Kazakhstan remains complicated. A key issue facing the republic in implementing its solid waste management policy is that there is little to no interest in waste sorting on the part of the population and private companies.

A promising area for resolving the above issue is studying the international experience and providing material incentives for producers of waste. These stimulation mechanisms include levies for solid waste disposal. Quite possibly, Kazakhstan could benefit from employing South Korea's practice of instituting environmental levies for municipal waste. South Korea currently has in place a volume-based system of levies for household waste, whereby waste levies are proportionate to the amount of non-recyclable waste that people dispose of. The system, launched in 1995, is gradually entering use throughout the nation, except for minor populated areas and remote regions. As of 2010, its effect extends to food waste as well. This system, focused on separate waste collection, has facilitated declines in the amount of waste that is accepted for burial at a landfill.

Of certain interest for the Republic of Kazakhstan in terms of stimulating its shift to a "green" economy is a market instrument known as the deposit return system (DRS). The use of this system is aimed at changing consumer behavior through encouraging one to return the packaging of products or expired products. With such a system, a potentially polluting product will have a price that includes an amount which is refundable if it is returned. As a rule, the legislation concerned with the DRS prescribes specific activity on the part of manufacturers and retailers and may authorize setting up new facilities for collecting and processing returned products.

One of the more prominent instances of employing a deposit return system is the Oregon Bottle Bill, which was passed in the U.S. state of Oregon in 1971 to address the growing concern over litter along Oregon's beaches, highways, and other public areas. For many years since its passage, the bill has inspired a number of other green initiatives. It requires containers for beverages – aluminum cans, glass bottles, and some other types of containers – to carry a refund value, as an incentive for recycling. The distributor charges a 10% deposit when it supplies the beverages to the store, and then the store charges a 10% deposit when it sells the beverages to the client. When the client returns an empty container to the store or the container bank, the store pays the client 10 cents for a container, and, when the store returns empty containers to the distributor, the latter pays 10 cents for a container to the store. This system *has* proven its efficiency: in 1971 beverage containers accounted for 40% of all litter in the state of Oregon, while since the passage of the Oregon Bottle Bill the figure has dropped to 6%.

The deposit return system could be implemented in the Republic of Kazakhstan using the "simple deposit" method or via centralized administration.

The "simple deposit" method, where there is no need for a preliminary agreement and consumers may purchase deposit containers in one store and return them in another, is the most economical way to manage deposits, as it helps avoid expenditure on a system operator, and is currently in regular use in the US. However, since this can result in major loss for particular operators, the US legislation allows retailers to reject container brands they do not have in stock. This will make it harder for consumers to return containers, but such agreements may be challenged by the European Commission.

Under the second method, centralized administration, deposits are managed via a system operator. This approach, which is in regular use in Europe, has a system operator coordinate the system and, as its major benefit, guarantees that consumers can return a container in any store.

When it comes to the Republic of Kazakhstan, the most practical option would, probably, be a system of centralized administration, which will regulate the cleaning of deposit containers, receipt and processing of payment flows from manufacturers (importers) to retailers, and transporting of returned containers from retailers to processors.

At the same time, it is worth noting that proposals on introducing a deposit return system are quite complicated and may require meticulous substantiation, based on relevant empirical data on current volumes within the market (*e.g.*, data on the current volume of plastic packaging and the potential for recycling it).

In addition, putting in place and operating a deposit system may inevitably entail significant expenditure. Many manufacturers and retailers will have to pay toward the deposit system, and also continue to pay for repackaging non-deposit products. Having a deposit system will mean greater costs for Kazakh industry, and, inevitably, a portion thereof will be passed onto the consumer, resulting in growing retail prices. Considering the present-day economic climate in Kazakhstan, the government will have to ascertain whether or not this additional expenditure is justified by the environmental gain it is seeking to achieve.

Another market instrument for ensuring "green" growth is systems of trading emissions quotas (emissions trading systems (ETS)), which are employed to allocate rights to emissions or the exploitation of resources. These systems are entering increasingly wider use throughout the world to help achieve political objectives in the area of mitigating the effects of climate change, air pollution, water shortages, or excessive exploitation of fish reserves.

At present, governments around the world are implementing a wide array of national and regional initiatives on trading emissions, which are focused on particular projects and are in different stages of their implementation. Jurisdictions covered by these systems vary from a broad regional level (*e.g.*, the ETS of the European Union, the Regional Greenhouse Gas Initiative (RGGI), and the Western Climate Initiative (WCI)) to a provincial level (*e.g.*, Alberta's emissions trading scheme) or a city level (*e.g.*, Tokyo's cap-and-trade program).

In December 2012, the Kazakh government signed into law a legislation on the national Emissions Trading System (ETS). The ETS, which went into operation in August 2013, is the first functional national ETS to be adopted by a developing member state within the Asia/Pacific region. The design of the Kazakh ETS is much similar to that of the ETS followed by the EU.

In putting in place the Kazakh ETS, coverage was limited to CO_2 from major emitters in extractive sectors, the power industry, the mining industry, metallurgy, and the chemical industry. In part, this is a pragmatic solution to the lack of decent baseline data on emissions and a willingness to focus on gathering high-quality information in fewer areas, which, in turn, may help ensure accurate measurements and reward activity on reducing emissions. At present, the government is considering the possibility of incorporating agriculture and transportation into the ETS.

In the view of a group of experts, including Head of the Climate Change Department at the Ministry of Energy of the Republic of Kazakhstan G. Sergazina and Chief Operating Officer of the Association of Consultant Engineers in Kazakhstan's Power-Engineering Industry E. Tanaev, most of the key issues in the operation of the system of trading emissions quotas in the Republic of Kazakhstan are associated with the following areas:

- remediating poor technical preparation in designing and implementing the system; resolving issues in terms of access to verifiers and the possibility of engaging them;
- creating reliable agreements with the Exchange;
- developing relevant approaches to allocation for future periods (grandfathering or benchmarking)

Grandfathering is, normally, employed in Phases 1 and 2 of national ETSs. This method implies the free provision of permits based on historical greenhouse gas (GG) emissions. In Phase 3 it may be possible to employ benchmarking, whereby allowances are allocated based on production performance indicators, not historical emissions. Units working intensively with GGs will receive fewer free permits compared with high-efficiency ones, which should urge taking relevant measures in respect of inefficient units to cover their excessive emissions;

- creating an ETS registration system;
- providing technical support for the national system of managing data related to greenhouse gas emissions (the cadaster) (Sergazina, Tanayev and Baigunakova 2013).

A potential efficient mechanism for stimulating the development of the "green" economy in the Republic of Kazakhstan is providing investment preferences for the support of projects related to the creation of renewable sources of energy and implementation of energy- and resource-saving technology.

Thus, international practice proves the efficiency of using market mechanisms of "green" growth in economically developed countries. At the same time, there is no standard path to shifting to a "green" economy, so the Republic of Kazakhstan may need to determine its own path to "green" growth by studying the market and assessing the promise of using the above market mechanisms.

Conclusion

A successful shift to a "green" economy will require active participation from the government, the business sector, and the community, with a focus on exploiting all possible potential for improving people's well-being and fostering social equality, while achieving significant declines in environmental risk and environmental deficiency. In managing the shift to a "green" economy, it may help to factor in not only the potential for development but also the risk of potential loss for certain groups and trade-offs among sectors. This holds both for specific solutions with regard to local communities and broader structural transformations within the economy.

While different countries may adopt different paths to shifting to a green economy, it is quite obvious that taking a broad spectrum of measures will be indispensable to a successful shift to a green economy in the Republic of Kazakhstan.

Mix- and focus-wise, the Kazakh government is expected to develop these measures by reference to the national conditions and potential for achieving progress. Among the highest-priority activities as part of the shift to a "green" economy in the Republic of Kazakhstan are creating a sound regulatory framework and working out a set of stimulating measures for attracting "green" investment using relevant market instruments, like environmental taxes, levies, and duties; permit trading systems; deposit return systems; subsidies. It will also help to develop a set of measures aimed at encouraging organizations and enterprises to adopt a willing, voluntary attitude toward improving their environmental performance.

Investigating the experience of the Republic of Kazakhstan with regard to the shift to a "green" economy may be useful in developing a policy for sustainable growth in other countries of Central Asia faced with common environmental issues (scarce water resources and their declining quality, increased air pollution, increased volumes of solid waste, more waste disposal sites, faster extinction of endangered species, etc.). The findings and recommendations provided in this paper should help unlock some of the potential for making a successful shift to a "green" economy and enable better understanding of what measures would be best to take and what instruments to employ for that purpose.

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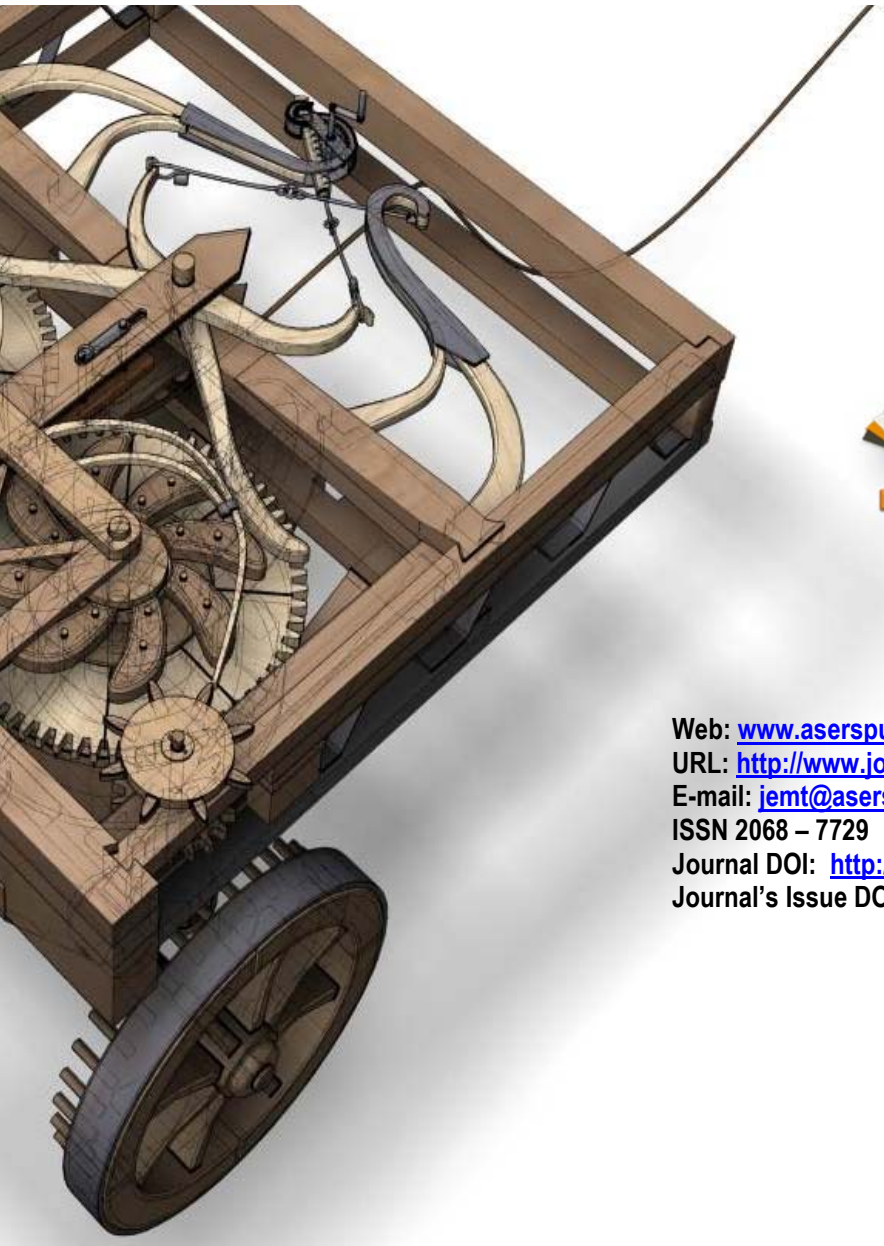

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