Nonfinancial Risks and Financial Opportunities in Combating Climate Change

Oleksandr Sushchenko, Andrii Buryachenko

Abstract: The problem of global warming in recent decades became especially important and is reflected in a number of international agreements aimed at intensifying the efforts to limit the rate of global warming below 2 degrees Celsius. Ukraine actively involved in the process of combating climate change by reducing the greenhouse gas emissions (under the Kyoto Protocol to the UN Framework Convention on Climate Change and Paris Climate Agreement). As a result, our country has been using the possibility of selling ERUs (Emission Reduction Units) as a part of the Joint Implementation mechanism (Joint Implementation - JI) and certificates AAU (Assigned Amount Units) to attract "green investments". The aim of the paper is to show how nonfinancial risks are influencing the global financial system and what kind of changes do the Ukraine need to undertake to attract resources from the financial market and fulfil our obligations under the Paris Climate Agreement and Association agreement with the EU.

Key words: Climate Change · Non-financial risks · Financial Market · ESG Principles · Corporate Sustainability · Corporate Social Responsibility

JEL Classification: G150 · Q58

1 Introduction

The idea of socially responsible business was introduced by H. Bowen (“Social Responsibilities of the Businessman”, 1953) and described in his concept of the CSR (Corporate Social Responsibility). But limited to voluntary responsibility this concept was unable to solve environmental, social and governance problems. As a response to that the new concept on “triple bottom line” occurred in 1997 and was described in the book written by J. Elkington “Cannibals with Forks: The Triple Bottom Line of 21th Century Business”. Hence, the problem of climate change moved from the area of voluntary corporate responsibility to the new business models, the category of non-financial risks and corporate sustainability. So, with the signing of the Kyoto Protocol and Paris Climate Agreement the above-described transition was accomplished.

The most important outcome of that shift is the fact that the companies and financial institutions are carrying about the creation of the so-called “blended value” (introduced by Jed Emerson in 2003, “The blended value map. Tracking the Intersect and Opportunities of Economic, Social and Environmental Value Creation”). According to this concept companies are trying to receive not only positive financial result but also carrying about creation of additional environmental and social value.

It was clear that only public funds are not sufficient to solve existing problems and the solution was elaborated by R. Coase (1910-2013) – introduction of the property rights to enact the market financial instruments. But introduction of the property rights and market financial instruments brought another problem – transaction costs. Hence, the main area of the current researches in the area of climate and social finance is about to find the ways to reduce those transaction costs. There is a need to elaborate not only new infrastructure on the financial market but also to establish a new legal framework in order to reduce transaction costs associated with market financial instruments implementation.

Thanks to the joint efforts of the biggest banks, investment funds, different financial institutions new framework on the financial market has been established and recipients of investments, loans forced to report on outstanding environmental, social, and governance risks in order to get an access to financial resources.
In fact, owners of the funds want to be sure that their resources will contribute to the reduction of environmental, social and governance risks (ESG), and the planned activities will be conducted in the most efficient and transparent way.

In accordance with Directive 2013/34/EC, 2014/95/EC, starting from the beginning of 2017 big companies on territory of the EU will be obligated to report on their non-financial risks (according to the ESG Principles). And even the risks throughout the value chain must be to be taken into account in their reporting. That is why even the risks of the business partners (for instance, suppliers) located outside the EU, will also affect the risks and overall rating of the company in the EU.

In addition, the biggest stock exchanges in the world today require from the listed companies to disclose the governance risk and, in certain cases, report on all three components (for instance, on Singapore Stock Exchange).

Moreover, rating agencies, starting from September 2015, are preparing ratings for the companies, municipalities, sovereign borrowers based on non-financial indicators (risks). Even if the borrower or beneficiary has good performance on environmental and social components, inefficient governance system can lead to a drop in the overall rating, "price" of the financial resources.

However, ESG risks should not be considered as a problem, because thanks to the newest financial instruments all those risks can be seen as an attractive possible asset to investment. It means that financial market is ready to finance projects related to transform ESG risks into the assets or to improve their own non-financial rating due to such results.

Ukraine is trying to make its own contribution to combating climate change by reducing the GHG emission in accordance with submitted INDC (Intended Nationally Determined Contributions). At the same time our country needs approximately 200 billion USD to fulfill the obligations. Only public sources cannot cover these needs. It means that Ukraine should create an appropriate framework to attract financial resources from financial market.

2 Methods
The methodological basis of the research is the dialectical method, systematic and historical approaches, the fundamental provisions of the economic theory, sustainable development concept, and the theory of finance. We used the following methods: a method of logical generalization, comparative analysis (financial support for environmental protection).

3 Research results
3.1 Nonfinancial risks and its influence on the global financial system
Doing business means dealing with risks of different kinds and level of impact on the financial results. Companies should take into account not only financial (for example, currency or fiscal risks), but also non-financial risks. So, according to the report published by the World Economic Forum, climate risks are the most important nonfinancial risks both in terms of likelihood and impact (see Table 1).

Table 1 Five global risks in terms of likelihood and impact in 2015.

<table>
<thead>
<tr>
<th>Likelihood</th>
<th>Impact</th>
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<tbody>
<tr>
<td>1st Interstate conflict</td>
<td>Water crisis</td>
</tr>
<tr>
<td>2nd Extreme weather events</td>
<td>Spread of infectious diseases</td>
</tr>
<tr>
<td>3rd Failure of national governance</td>
<td>Weapons of mass destruction</td>
</tr>
<tr>
<td>4th State collapse or crisis</td>
<td>Interstate conflict</td>
</tr>
<tr>
<td>5th Unemployment or underemployment</td>
<td>Failure of climate-change adaptation</td>
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That is why we should look more precisely at the most important threats to be prepared for the upcoming challenges and possible damages. All this could lead to enormous losses and provoke next financial turmoil. In order to prevent possible negative consequences of such challenges the whole international community signed a wide range of agreements and set the so-called UN Sustainable Development Goals that reflect the needs of the modern economy (see Table 2).
Table 2  Ranking of SDGs by level of transformational challenge in developed countries (maximum level – 8)

<table>
<thead>
<tr>
<th>Goals</th>
<th>The overall rating of the goals</th>
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<tbody>
<tr>
<td>Goal 13. Take urgent actions to combat climate change and its impact</td>
<td>7.1</td>
</tr>
<tr>
<td>Goal 7. Ensure access to affordable, reliable, sustainable, and modern energy for all</td>
<td>6.4</td>
</tr>
<tr>
<td>Goal 12. Ensure sustainable consumption and production patterns</td>
<td>6.3</td>
</tr>
<tr>
<td>Goal 14. Conserve and sustainable usage of the oceans, seas and marine resources for sustainable development</td>
<td>4.4</td>
</tr>
<tr>
<td>Goal 10. Reduce inequality within and among countries</td>
<td>3.6</td>
</tr>
</tbody>
</table>


It seems like the problem of climate change needs engagement of representatives from different environmental organizations. However, if you count the cost of measures to reduce greenhouse gas emissions and saving the pace of global warming within 2 degrees Celsius, we get the amount that exceeds 100 trillion USD - this means that you need to accumulate 2030. In other words, every year we have to spend about 8 trillion USD due to fiscal and financial market instruments. In accordance with the report published by the Climate Policy Initiative, almost 400 billion USD being spent each year for the climate-aligned projects. Therefore, there is a gap and the problem of climate change can not be solved only by implementations of the fiscal instruments and becomes the responsibility of financial institutions (see Figure 1).

Figure 1  Climate finance in 2012-2014, billion USD.

The main question that now faces the international community due to the need to choose between a tax and market instruments to accumulate the necessary volume of climate finance (or develop effective mix). If taxes are the most effective tool, the market opportunity is much larger and can draw on financial markets the resources needed.

For Ukraine, this problem is also of the great importance, as the German company DIW ECON estimates, our country needs about 200 billion USD to make our economy "green." One of the ways to this goal there is a choice between market financial instruments and introduction of a carbon tax at a minimum level of 1 USD.

In this regard, pretty symbolic seems to be a meeting of the representatives of the financial market on November 4, 2016 – the day when the Paris climate agreement entered into force. The purpose of this meeting was to harmonize mechanisms and instruments for the GHG emissions reduction projects. An important feature of this meeting was the fact that one of the organizers on this event was the platform for Climate and Sustainable Development Finance created...
by the city of Paris. This platform brought together national and international financial institutions for the purpose of the climate finance mobilization.

However, Paris was not the only example of such efforts. Shortly after the signing of the Paris climate agreement other platforms appeared. The next city that established almost the same platform for the purpose of climate finance accumulation, was London. The city of London is an example of a successful partnership between private and public sectors of the financial system - successful "Platform on Climate Finance". The main idea of this platform is to create institutional conditions for the issuance of financial instruments and to promote accumulation of climate finance needed to implement GHG emission reduction projects. The main advantage in this case is the fact that this platform is supported not only by the authorities, but also by the largest investment funds, banks (for example, BlackRock).

Another possible center of the climate finance mobilization could be a platform set up by the initiative of European Investment Bank, Luxembourg Stock Exchange and the Grand Duchy of Luxembourg (October 2016). An important advantage of this center is the Luxembourg Stock Exchange with (the first green bonds was issued here in 2007). Another important factor is the presence of representatives from different international financial institutions, accounting and consulting firms. This could create all the necessary conditions for the climate finance accumulation - reduce the GHG emissions and limit the global warming by 2 degrees Celsius.

Ukraine has signed the Paris climate agreement that not only imposes certain obligations on the country, but also provides opportunities for “green” investments, development of the financial market infrastructure. An important negative feature of the Paris climate agreement is the lack of instruments that can generate sufficient financial resources for the projects of the GHG emissions reduction. However, with the signing of Association Agreement with the EU (further, Agreement), Ukraine has committed to implement by 2017 its own Emission trading system (Directive 2003/87/EC). This market brings both threats and opportunities for domestic companies because in addition to emission limits gives them the right to use the received certified emission reductions as an asset on the financial market (sell or buy, etc.).

At the same time in the Annexes to the Agreement there are several directives (2013/34 and 2014/95 new Directive) that provide new requirements to prepare not only financial but also non-financial reports for the big companies. Non-financial reporting in accordance with new requirements foresees disclosure of environmental and social risks-information of the company in accordance with the ESG Principles (Environmental, Social and Governance).

All this requires specific accounting standards for the certified GHG emission reductions and the results of social projects. Proper accounting of the units (permits) of the reduced GHG is a prerequisite for the non-financial (sustainability) reports, which is an important communication tool with the shareholders and financial market in general.

In addition, implementation of the Emission trading scheme in Ukraine makes it possible to boost develop the financial market by providing the impetus for the use of derivatives, which mediate the purchase and sale of certificates (permits for greenhouse gases). It also makes possible to significantly improve disclosure of financial and non-financial information - primarily for the risk assessment.

Major stock exchanges in the world (London, Frankfurt, Warsaw and other exchanges) require from their participants reporting and compliance in accordance with the ESG Principles. At the same time, investment companies and banks are actively offering new financial instruments to raise funds for implementation of the projects related to the reduction of GHG emissions and improve energy efficiency of production.

3.2 Role of the nonfinancial risks in shaping a new framework on the financial market

The most significant event took place by the end of 2015 – the Paris Climate Agreement was agreed by almost 190 countries (hereinafter, Agreement). This Agreement should replace the Kyoto Protocol after 2020 and according to which Ukraine has pledged to emit no more than 60% of the GHG (in 2030) compared to the level of 1990. But the most important treaty for Ukraine in terms of combating climate change is the Association Agreement with the EU, where the problem of global warming and climate change pervades almost all sections and annexes.

On the global market financial institutions have already agreed on the new framework, which will connect companies, municipalities, governments and investors. These new financial framework foresees new approaches in reporting and evaluation of the nonfinancial risks and results (see Figure 2).
On each stage from the companies to the financial market there are different initiatives aimed at disclosure and evaluation of nonfinancial risks and results. For example, the most known and widely accepted initiatives in the area of nonfinancial reporting are Global Reporting Initiative (GRI) and Principles of responsible investments (PRI). The former initiative provides the necessary recommendations and standards to prepare the annual sustainability reports and the latter is dedicated to the evaluation of the investments projects.

Having nonfinancial information gives an opportunity for the rating agencies to evaluate those risks and results and to give a rating. This rating will show the extent to which companies, municipalities and governments are depending on the nonfinancial risks. At the same time, investors will be able to invest and creditors could give the credits.

**Table 3** Climate-aligned categories of the sustainable developments bonds.

<table>
<thead>
<tr>
<th>Categories</th>
<th>Description</th>
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<tbody>
<tr>
<td>1 Development Finance Institutions (DIFs) Bond</td>
<td>Issued by Development Finance Institutions (for example International Bank for Reconstruction and Development) to finance their business operations</td>
</tr>
<tr>
<td>2 Environmental Impact Bond</td>
<td>Pay-for-performance contract</td>
</tr>
<tr>
<td>3 Environmental Performance Bond</td>
<td>The payment is only returned if the environmental damage of the activity does not exceed certain threshold</td>
</tr>
<tr>
<td>4 Environmental Policy Performance Bond</td>
<td>Governments use debt to &quot;promise&quot; investors they will stay true to their environmental policies, at no cost to themselves if they keep their promises</td>
</tr>
<tr>
<td>5 Forest bond</td>
<td>Fund forest preservation and transition to sustainable livelihood</td>
</tr>
<tr>
<td>6 Forest resilience bond</td>
<td>Pay-for-success funding for environmental conservation</td>
</tr>
<tr>
<td>7 Green bonds</td>
<td>Fund GHG reduction, energy efficiency and renewable energy production projects</td>
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</tbody>
</table>

The market for climate financial instruments is developing very fast but the volumes are not yet sufficient to cover the needs in climate finance. Nevertheless, those instruments will play an important role in attracting financial resources not only for the GHG emission reduction projects, but also for improvement of social and governance indicators in accordance with the so called UN Sustainable Development Goals (SDG) (see Table 3).

All these instruments give the opportunity to build the bridge between financial market and real sector, fulfill climate-aligned obligations and limit the global warming. At the same time there left a lot of things to do, especially in the area of accounting, where no specific standards to account results of the GHG emission reduction projects exist.

### 3.3 Challenges and financial opportunities for Ukraine in combating climate change

In January 2015 President of Ukraine signed an economic development strategy "Ukraine 2020", according to our state in the coming years will be to create the conditions for building a "green economy". According to various estimates, our economy will need more than 170 billion. Dollars. for this purpose. It is obvious that the government funds and funds of
international financial institutions will not be enough for this. That is why the transition to new accounting standards and reporting will enable our companies to access funds on the international market, improve the ratings of both the companies and their financial instruments.

Another important problem is the lack of specialists in the field of climate finance, which could help introduce a system of trading permits for greenhouse gases, to provide the necessary infrastructure of financial markets, which will bring Ukraine to the resources required to fulfill its climate commitments. For the Ukrainian corporate sector (especially for the energy sector companies) ignoring environmental (especially climate change), social and governance risks could potentially lead to deepening of problems in commercial and financial areas (commercial and financial risks).

Commercial risks, first of all, associated with possible problems of selling "dirty" products on the EU market, and then on domestic market after the introduction of limits for the GHG emissions as a part of the national Emission trading system.

It is necessary, first of all, to point out the possible negative consequences for the exports of electricity to the EU, where starting from 2017 all the big companies should report not only on the own environmental, social and governance risks, but also on those risks that occur throughout the value chain from supplier to consumer products and/or services.

Non-financial risks could lead either to the growing cost of financial resources (for example, investors should collect the information and assess the risks) or its unavailability. Introduction of the price on GHG emissions could also create additional costs for the producers of electricity.

On the other hand, application of the non-financial reporting (environmental, social and governance principles) could reduce the uncertainty and give an access to the financial resources needed for the GHG emissions reduction projects. Acting in accordance with the Directive 2013/34/EC on the annual financial statements, consolidated financial statements and related reports of certain types of companies (implementation in Ukraine was planned for July 2015) should force big companies to report to the stakeholders on the level of outstanding non-financial risks. All this can give an access to the market financial instruments such as climate, green bonds, which purpose is to raise funds for conducting the GHG reduction, energy efficiency improvement, waste management, water quality improvement projects.

Also of the great importance is the Directive 2003/87/EC - foresees introduction of the Emissions trading scheme in Ukraine (hereinafter - ETS) in 2017 (realistically, by the end of 2018). This system will impose not only obligations for domestic companies to reduce the GHG emissions, but also an opportunity to sell on the market the outstanding surplus of those emission allowances. In addition, this system will enable the usage of existing certificates as an asset for the purpose of attracting investments or receiving the credits - they will have its price on the market.

It should be noted that the current EU ETS is forcing manufacturers to consider "carbon price" in their costs calculations (one certificate/allowance equals to as the 1 ton of the GHG emissions). And even if the Ukrainian company will delay the reduction of emissions and the introduction of reporting on environmental, social and management risks, European consumers of Ukrainian goods will impose disclosure requirements for the above-mentioned risks.

Importantly, according to the Decree of the Cabinet of Ukraine № 847-p (action plan for the implementation of the Association Agreement with the EU) of 17 September 2014, the implementation of this legal act was to take place until August 2016. However, to date there is even the previous version of the bill this document. Responsible for the implementation of the said Directive is the Ministry of Environmental Protection of Ukraine.

Important fact is the fact that the circulation of the certificates provided for in Directive 2003/87/EC, cannot take place without the use of derivative financial instruments (derivatives). That is why we should pay attention to the European Parliament and Council 2014/65 / EC on markets in financial instruments (MiFID-II), enactment of 2016 and Regulation 600/2014 of the European Parliament and of the Council on markets in financial instruments (MiFIR), (implementation - 2017). These Directives enable attributed certified emission reductions of greenhouse gases into the category of financial instruments. It is this step allows investors and lenders to be sure that as a result of investing in projects to reduce greenhouse gas emissions, you can get an additional asset. Responsible for the implementation of these regulations is the National Commission on Securities and Stock Market of Ukraine.

Indirectly, climate change reflected in Directive 2009/28 / EC on the promotion of the use of energy produced from renewable energy sources and Directive 2004/8 / EC (implementation August 2017) on the promotion of cogeneration. It is in these documents providing the possibility of introducing the system of certification of units produced renewable energy and energy during the production of which was to improve energy efficiency.
However, none of the above regulations (Directives and Regulations) have not been implemented so far, which does not allow Ukrainian companies-emitters of greenhouse gases to fully benefit from climate finance and to raise funds needed to maintain the rate of temperature increase on the planet in certain in Paris climate treaty limits.

4 Conclusions

Ignoring global trends and procrastination in the implementation of the necessary legislation (in particular, it is the Directive, the Agreement on association with the EU), could lead to the fact that centers flows of climate finance will bypass our country and we are unable to timely comply with the relevant obligations. Liabilities in the Paris climate agreement. Another possible consequence - we can get resources through intermediaries, which will increase the value of the resource. In both cases we will have to catch up or stated rate or pay extra for failing to implement necessary changes - to create institutional conditions not only for treatment of new financial instruments, but also for establishing links between investors, creditors and recipients of financial resources. In this case the non-financial reporting, which allows you to fully inform investors about the level of risk for individual projects on display and the possibility to create assets.

In order to use the opportunities of the Association Agreement with the EU, our team can offer the following solutions:

- development strategy of the company, taking into account environmental, social and governance risks;
- preparation of non-financial reporting required for reporting to the European buyers of electricity and the emission of climate, green bonds;
- establishment of a "road map" and support in the process of raising funds through sustainable development and green bonds;
- capacity building not only for the companies, but also for the municipalities and governments.

All these measures and implementation of the above mentioned Directives will help our companies and public agents attract financial resources - fulfill their obligations in combating climate change, improving social conditions and quality of governance on all levels of the economic system.

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