

2017

COP 22 ...from Paris to Marrakech



MARRAKECH COP22
UN CLIMATE CHANGE
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**ENERGY AND
ENVIRONMENTAL
POLICY
LABORATORY**

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COP 22 ...from Paris to Marrakech

EDITORIAL

For the past few decades, the issue of Climate Change is gradually being placed to the center of attention of international environmental policy. States, international organizations, private companies and individuals are all becoming familiar with the fact that Climate Change is real. The 2015 Paris Agreement marks the beginning of a new, global effort towards managing this situation through international cooperation.

The Energy and Environmental Policy Laboratory of the University of Piraeus, focusing on a variety of research areas such as Climate Change & Environmental Impact Assessments, decided, with the outmost excitement, to dedicate this publication to the ongoing issue of Climate Change. Specifically, our first report delves into the Paris Agreement and the 2016 Conference of Parties to the United Nations Framework Convention on Climate Change in Marrakesh, along with key facts concerning the environmental policy of major states. This combination of international policy and an environmental issue like Climate Change, cannot but draw the attention.

At this point we would like to thank especially the students who wrote the reports herein in order of appearance, Georgia Fekou, David Fusiek, Maria-Nefeli Malliou, Foteini Giannopoulou, Olga Maggina, Errieta Monioudi, Anna Koraki, Athanasia Karamerou, Panagiotis Sardelis and Dr. Ioannis Tsipouridis for sharing his

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Dipl. Eng. Stavros Karagiannakis

Appendix

Participating in COP22: Interview with Dr. I. Tsipouridis*	2
Implementing the Paris agreement: The developments of the COP22	3
Donald Trump’s policy for COP22	9
EU environmental policy	13
China’s environmental policy	17
Russian environmental policy	21
COP22 and the Developing Countries	24
Cop 22 and Sustainable Cities	28
COP22 and the Arctic	31
Participating in COP22 Interview with Dr. I. Tsipouridis	34

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Participating in the COP22: Interview of Dr. I. Tsipouridis*

**Dr. Ioannis Tsipouridis, President of the Hellenic Wind Energy Association Public Group and member of the advisory board of the Energy and Environmental Policy Laboratory, shared with us his experience from attending the last Conference of Parties in Marrakech, along with his opinion, as an expert, concerning the issue of climate change, the Paris Agreement and the ongoing developments following President Trump's latest decision to withdraw U.S.A. from the Agreement.*

First, we would like to thank you for accepting to share your experience on COP22 and views on the developments concerning climate change.

It is my pleasure.

The Energy & Environmental Policy laboratory is preparing a report aiming to inform those interested in the issue of climate change about the latest developments, providing in parallel some general information about the Paris Agreement, even if they have never heard of the terms "Conference of Parties" or "United Nations Framework Convention on Climate Change". To begin

with though, we would like to ask you about your participation in COPs. Under which status did you participate?

I participate in my capacity as President of the **Hellenic Wind Energy Association Public Group (ELETAEN)**, which is member of the **Global Wind Energy Council (GWEC)**, which in turn is a member of the **BINGO group (Business and Industry Non-Governmental Organization)** which is participating in the COP negotiations as an NGO. GWEC, is eligible for 2 delegates of the BINGO group. Both in COP21 and COP22, luckily for me, one of these positions was filled by me for one week only, the first, and unfortunately, not for the whole duration of the COP. BINGO group does not belong to the Parties, and hence it does not participate in the negotiations process. However, they can participate in some selected discussions, and in some cases, they might even be asked formally for an opinion. BINGO group takes part in the COP negotiations process as a lobby group in the "unofficial delegations" which are however an integral part of the process. They add much needed color and groups like BINGO, exert significant influence.

Continued at page 35...



Implementing the Paris agreement: The developments of the COP22

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On 5 October 2016, the threshold for entry into force of the Paris Agreement was achieved. The Paris Agreement entered force on 4 November 2016 (“The Paris Agreement”). The first session of the Conference of the Parties (COP) serving as the Meeting of the Parties to the Paris Agreement (CMA 1)

took place in Marrakech, Morocco from 15-18 November 2016. The Conference of the Parties held in Marrakech (COP22) marks the start of the necessary hard work states need to do towards turn the promise of Paris Agreement into action (Schwartz, 2016; Richtel, 2016). Every state which is taking part in COPs has as responsibilities to cooperate with the others about greenhouse gas emissions, financial-technological support and adaptation. The COP22 is important as it is first major event focusing on the implementation of Paris agreement (Harvey, 2016a). Although, Paris Agreement was an undoubtedly





important step as it established a new approach to climate change with the introduction of “nationally determined contributions (NDCS)”, it is not yet fully sufficient to deal with the current global environmental issues. The climate pledges of the states needed further discussion and action and this was the point where progress was made by the COP22. Especially, the goals that Paris promised are still vague as well as dependent on the political opinion and will of each world leader that contributed to the Agreement. The intense climate change stresses the need for quick development of certain rules and commitments beyond the Paris Agreement.

Given that every political leadership has its own approach on climate issues, which aims at, first, serving the interests of its country and, second, the interest of the whole world, it is understandable that each state follows a self-interest strategy and, therefore, can be unwilling to collaborate with other states on such significant problems, like human-caused climate change. This could be destructive not only for the greenhouse gas emission goal but also because it could affect other state’s

positions. Unfortunately, a recent example is the controversial moves of the Trump administration on crucial environmental issues and the possible withdrawal of the US from the Paris agreement, something that hinders the total progress. An American withdrawal could weaken other nation’s resolve to keep their climate promises and would make the goal of keeping global warming within at least a 2°C threshold quite impossible, as the US is the second biggest greenhouse gas emitter. Despite consequent uncertainties following the Donald Trump election, Marrakesh meeting, which served as the first meeting of the governing body of Paris Agreement, was an important transitional moment focusing on work-plans and implementation (Harvey, 2016b). “This COP is the first stop after Paris and it needs to cover and take up the issues to make Paris work and be implemented, so that is what it’s doing,” said Stephen Cornelius, chief advisor on climate change at WWF-UK. Although the COP22 in Marrakech took place few days after the Paris agreement entered force, its assessment of its achievements (Carraro, 2016; UN News Centre, 2016; Yeo, 2016)



is rather ambiguous, as its momentum created expectations.

The official outcomes of the COP22 were a collection of diverse documents, with some of the most remarkable discussions and suggestions being characterized as ‘informal notes’. Discussions and decisions were including a broad spectrum of topics such as mitigation, adaptation, transparency, financial aid, energy policy of developing countries. States know that these are their fundamental obligations but, in order to achieve their final goals and face looming climate change, further elaboration on details and actions is required. They also resolved that final decisions and implementation measures are going to be ready until COP 24 in 2018 (COP22, 2016).

Notable outcomes of the COP22:

Finance

Developed countries agreed to a financial roadmap in order to reach the agreed goal of 100 billion per year by 2020 as a way to boost climate-friendly attitude on developing countries. The issues discussed included whether the accounting of public and private finance should apply not only to flows from

developed countries but also to broader flows. Countries and others announced a variety of new financial pledges, for instance: a doubling of World Bank climate finance for the Middle East-North Africa region to \$1.5 billion by 2020.

Adaptation

Climate adaptation refers to the ability of a system to adjust to climate change. Adaptive capacity can reduce a system’s vulnerability and “save” it from possible damage. Within the APA (Ad Hoc Working Group on the Paris Agreement), states discussed their adaptation needs and efforts. The Adaptation Committee started thinking the ways by which developing countries’ adaptation efforts will be better identified. There was also a discussion about the Adaptation Fund, a body that many argued it should be moved over from the Kyoto Protocol to the Paris Agreement so as to maintain adaptation as a priority in the future. Eventually, parties decided the fund “should serve the Paris Agreement”.

Facilitative Dialogue

In Paris, parties of the UNFCCC agreed that they would convene a



facilitative dialogue in 2018 to “take stock of the collective efforts of Parties” and “inform the preparation of NDCs”. In Marrakesh, it was agreed that the presidents of COP22 and COP23 would consult with states on the organization of this facilitative dialogue and would submit their findings next year.

Loss and Damage

Negotiators also agreed to a five year work-plan on ‘loss and damage’ section, which is going to start in 2017, and will have as target to protect vulnerable countries and deal with many problems caused by climate change such as slow-onset events like sea-level rise, non-economic losses (e.g. identity) and migration (V20, 2017). Marrakesh made clear that the climate change-related loss and damage have to be addressed alongside adaptation and mitigation.

Orphan Issues

These so-called issues are issues referred in Paris Agreement but no one was assigned with any responsibility for them. They include, for example, tasks for the new financial goal beyond 2025 and the establishment of common timeframes

for NDCs. Unfortunately, states discussed without specific resolution.

Other Achievements

The Marrakesh Action Proclamation for Our Climate and Sustainable Development: a reaffirmation of worldwide commitment to Paris Agreement, issued by Heads of States.

Climate Vulnerable Forum: 47 of the world’s poorest countries, which have grouped together as the Climate Vulnerable Forum, committed generating 100% of their energy from renewable sources the sooner they can. They also pledged to update their nationally determined contributions before 2020 and to formulate long-term strategies in order to pursue actual solutions and address the urgent threat of climate change.

Concluding remarks:

It is indisputable that COP22 is about action. It is about implementing and supporting the agreed ways to reduce the emissions responsible for global warming and about helping those countries in need. However, the unexpectedly rapid enforcement of the Paris Agreement and the global interest on emissions and



global warming does not mean that the problem has reached its solution. Countries make pledges but eventually they may not honor their commitments. In other words, Paris Agreement can be touted as legally binding in pushing states to accept that global warming should be limited to well below 2.0 °C relatively to pre-industrial levels but the commitments on reducing the greenhouse gas emissions are not legally binding. Each state can act freely as there are no sanctions. The discussions and decisions made on agreements like the Paris Agreement and meetings like COPs are based on solidarity between the states, respect on their differentiated responsibilities and confidence that the international community will meet its global climate goals as soon as possible. That's why Paris agreement states that these provisions "shall be implemented in a facilitative, non intrusive, non punitive manner, respectful of national sovereignty, and avoid placing undue burden on parties."

In fact, despite the pledges and the motivation of the states we have to keep on mind that the decisive modification and the real change of our attitude towards nature will possibly cost a lot in

economic terms. That could create reasons for states to ignore this urgent situation and flout their commitments. Especially, when it comes for developed countries that have a significant liability for the greenhouse gas emissions in the atmosphere, such as USA, China, et al. this could be destructive. Unfortunately, international community often observes behaviors which diverge from the final goal. The truth is that the goal of decarbonization and the general progress on climate change stresses for an ultimate transformation in the global energy production and a great willingness for new initiatives. In Marrakesh, we did not see radically new ideas but, undoubtedly, states made a remarkable effort to find the more effective ways in order to fulfill the ambitious objectives that Paris Agreement set out. Especially, during the second week of negotiations, Mexico, US and Canada launched their low carbon development strategies, Germany proposed the Climate Action Plan aiming to a 95% reduction of emissions by 2050 and some of the poorest countries of the world (Climate Vulnerable Forum) pledged to renew their NDCs by 2020 and use 100% domestic renewable energy as soon



as possible. Initiatives in sectors such as finance and loss and damage emphasise on how crucial is the public and private finance for a climate resilient world and how adaptive technologies can be found and used in order to face every problem (for example, the daily problems of indigenous people and the possible extinction of some species) that is related to anthropogenic climate change. However, despite the fact that international community is much closer to its ambitious goals as it was some years ago, we have to admit that this is going to be a difficult and long-term procedure that needs global cooperation among states. Finally, we can say that the Conference of the Parties in Marrakesh did not create a total new framework that could reduce greenhouse gas emissions and wipe out global warming but it reaffirmed the “irreversible momentum” for climate action referred in the Proclamation, given the contentious Trump’s election.

“Change will not come if we wait for some other person, or if we wait for some other time. We are the ones we’ve been waiting for. We are the change that we seek.”

-Barack Obama

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Donald Trump's policy for COP22

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Since Donald Trump's election the treatment of many challenging issues has been met with great concern, not only by the American citizens but also by the whole global community. One of the most important topic was the environment and the phenomenon of global warming.



If we take into consideration, the big steps that were made during Obama's governance as POTUS, it is possible to understand the anxiety of people over this matter. Especially, if we take into account the statements made by the new president in the before-election period. So, the policy of Mr. Trump concerning environment has remained a big mystery and still is. All this time, the pro-environment parties and the non-government organizations were continuously preparing for the worst. But, everything changed in 28th of March. The new POTUS signed a new

executive order, putting any progress achieved on the issue of environment under a big question mark.

The domestic energy policy

The new executive order signed by Donald Trump tackled major issues like Clean Power Plan, environmental regulations and the promotion of sustainable development. The new policy has a main goal to revitalize the whole energy industry and combat unemployment. It will also lower the costs of energy products for "the hardworking Americans" and create new job opportunities. The new executive order has been characterized as pro-environment by the new government. It seems as paradox, when it is paying more attention to achieving cheap energy rather than promoting eco-friendly policies.

First of all, we should say goodbye to the Clean Power Energy Plan. This initiative was Obama's signature environmental policy that had as a goal to reduce the emissions of US power plants 32 percent below 2005 levels until 2030. Mr. Trump realized that any restrictions coming from government are not received positively from the public, especially when they are expensive. So his aim is to suspend the case until the EPA can review and write a new version of the rule. Specifically, it will probably focus on promoting a more modest version that will require only



incremental cuts concerning the coal plants. It is important to point out that any changes will have to go through the formal rulemaking process and be legally justified. Moreover, this process could take several years if we take into account, the huge amount of legal challenges that will arise from environmental groups.

Secondly, Donald Trump is reconsidering carbon standards for the new coal plants. Of course, there will be some standards set, but the new president wants to lower the cost of restrictions imposed by Obama's administration concerning the level of carbon dioxide emissions. It is obvious that he wants to revive the coal industry that was so scrutinized under Obama's governance. By lifting some of the regulations, Mr. Trump is hoping for some further development in this sector. But the success of this undertaking is in danger if we consider the low and competitive price of gas.

Thirdly, Mr. Trump will try to promote the "vastly untapped" energy reserves. As it seems, for so many years, America has not been using the great potential that its domestic energy sector provides. There are \$50 trillion in untapped shale, oil, and natural gas reserves. So, America should not neglect this huge opportunity to create jobs and achieve prosperity. Moreover the POTUS has decided through his new executive order to reconsider methane emissions for oil and gas

operations. As it is widely known, methane is one of the contributors to the phenomenon of global warming. But will it matter when America will be great again?

Last but not least, the new president is committed to achieve America's energy independence. The Great America will not be submitted to any threats coming from their hostile partners in the energy sector as OPEC cartel or other nations. Unfortunately, the policy followed by Obama's administration has caused the weakening of America's global position. He will try to change it through the development of more bilateral cooperation with other countries. In addition, this project is not only crucial for America's development but also for the goal of counter battling terrorism.

In general terms, it seems like Mr. Trump is trying to overturn everything achieved by Obama's administration. So, we will be seeing a lot of Obama's achievements and executive orders being replaced by new policies. Moreover, Trump's energy policy is outdated. In today's global community, more and more dominant players are investing in cleaner and renewable energy sources. For example, China is spending huge amounts of money in the sector of solar energy. Even India has stopped its support for the development of coal industry and its looking forward to a greener future. So as we can see, America's choice to neglect the evolution of



environmental technologies and support for old fashioned energy sources, is unreasonable. Especially, if we consider that the policy followed by American government can put American global interests in danger.

USA and the COP22

The election of the new POTUS was not well received and caused huge disappointment to other participants of the Paris agreement. Especially, if we consider the huge progress that was achieved in the previous COP21. Under Obama's administration, many big steps towards a greener future were made. Firstly, the alliance between America and China was crucial. Secondly, Obama had promoted some preliminary policies that were positive for the environment and supported the reduction of global emissions. But the most important step was the acknowledgment that global warming is a thing and it should be treated immediately.

Furthermore, the task of implementing a global agreement concerning environment is extremely difficult. There is not an option to stop global warming for some years. This phenomenon will continue to grow bigger and bigger every day until it becomes inevitable. Moreover, countries can't resolve this issues on a state level. So, as we can presume there is a need for global cooperation and the adoption of further

common policies. Despite the big steps taken by COP21, the whole undertaking is now in danger. Especially, from a man that doesn't acknowledge the gravity of this issue. It seems like immigrants are a more pressing matter than environment.

The three key changes in USA energy policy adopted in COP21, were the switch from coal to gas, the promotion of low carbon energy sources and the general reduction in energy demand. As you can see this three points don't really comply with Mr. Trump's energy plan. So it was no surprise when Donald Trump announced the withdrawal of America from the Paris agreement. The reasons backing up his decisions according to him and his staff is that this international agreement is proving to be costly to maintain for the US coal industry and it is putting in danger the interests of American Energy Sector and those of American workers. In addition, there are many industries that have been damaged by its impact like cement, iron, steel, natural gas and coal. The most interesting part of Trump's new policy is his will to renegotiate a new agreement that will prove to be more beneficial for both sides than the one that was signed in COP21. But, simultaneously, the perspective of not reaching a common interest agreement is not something that troubles him particularly.

So, the impact of Donald Trump's policy on the negotiations in Marrakesh is not



entirely certain. His decision to be no longer a part of the Paris Agreement has certainly casted a shadow over the fate of the future negotiations between the international key players on the topic of common environmental policies. When it comes to the global impact of Trump's energy policy and the future of COP22, the outcome can vary. Firstly, China could become the global dominant environmental leader. Chinese Premier Li Keqiang has expressed his disapproval of Trump's new environmental policies and he put emphasis on China's will to stay true to its commitment. As we know the country is investing huge amount of money into renewable energy sources like wind and solar energy. Especially if we combine this fact with the decline of American's government interest, we can safely presume that if things don't change we will see the dominance of China. Secondly, the negative policy of Donald Trump's towards global warming and carbon emission's reduction, may weaken the power of international institutions. As a result we can see the development of harsh nationalism concerning environmental issues and the decline of global cooperation. This argument seems reasonable and valid if we consider that the success of Paris agreement was based on the partnership between U.S.A and China. Thirdly, there is some hope that the negative impact of Trump's environmental and energy policy will be limited by the global

factors and the climate policies will not be weakened much. For example China could continue its support for further decarbonization retaining the global momentum towards greener and cleaner technologies. Furthermore, the European Union and its key members could prove crucial for the strengthening of global environmental policies contributing toward the formulation of an overall global positive effect. The leaders of Italy, Germany and France already put on a statement saying that the Paris deal was "not renegotiable". So as we can see there is some room for optimism that Donald Trump will not put in danger everything that has been achieved in COP21. But, there are still some issues that should be tackled. The main goal is further progress and not stagnation. So, any actions taken by individuals should not affect the general strive for a greener future.

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EU environmental policy

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The protection and improvement of the environment's quality is one of the aims of the EU, according to the third paragraph of Treaty on European Union. The EU has a very thorough environmental policy, which started in 1973 with the first Environmental Action Programme (EAP). During the '80s the EAP was oriented towards the limitation of the barriers in the Internal Market, meaning that the harmonization of environmental standards was beneficial for the non-tariff trade and industry competition in the European Community. The Single European Act in 1987 was the first treaty that included a chapter for environmental protection. In '90s environmental policies were linked with the term "sustainable development" in the European Community (Hey, C.)¹. The EU supports and is a party in several major international agreements about the



Living well, within
the limits of our planet
7th Environment Action Programme

1. The official logo of the 7th Environment Action Programme of the European Commission



environment and its protection, such as the Kyoto Protocol and the Paris Agreement. The Union also participates in environmental negotiations in the frame of UNFCCC.

Besides the fact that the EU shares competence with the member states in the principle area of the environment, the EU sets certain goals on the environmental policy.

- *protecting human health,*
- *prudent and rational utilization of natural resources,*
- *promoting measures at international level to deal with regional or worldwide environmental problems, and in particular combating climate change”.*



Greenhouse gas emissions (including international aviation and indirect CO₂, excluding LULUCF) trend, EU-28, 1990–2014 (Index 1990 = 100)

Source: Eurostat (env_air_gge), European Environment Agency

More specifically, in the 191 article of the Treaty on the Functioning of the EU is mentioned that:

“Union policy on the environment shall contribute to pursuit of the following objectives:

- *preserving, protecting and improving the quality of the environment,*

The reduction of greenhouse gases and the EU ETS

The EU has achieved its commitments for the reduction of greenhouse gas emissions compared to 1990 levels, according to Kyoto Protocol, as the following graph by Eurostat suggests.²

According to the statistical findings of Eurostat (2016)³ from 1990 to 1999 there was



a significant reduction of the greenhouse gas emissions in the EU, except the year of 1996. The following years the levels of the emissions were relatively stable. Though, in 2007 there was a sharp fall of emissions' levels, which could be linked with the beginning of the global financial and economic crisis that reduced the industrial and economic activities.

The key to this successful reduction of emissions might be the innovative EU emissions trading system (EU ETS)⁴, which operates in 31 countries (all 28 EU countries plus Iceland, Liechtenstein and Norway). The EU ETS⁴ was established in the EU with a directive in 2003 (Directive 2003/87) and it has been amended since then several times. The system works with the companies buying or receiving emissions allowances (which are tradeable among them) on a total amount of greenhouse gases for a specific period. The EU ETS is an environmental law, which means that the Commission could impose infringement procedures if a member state failed to implement it properly.

The environmental policy and goals of the EU

The EU pursuing its environmental policy with the 2020 package³, which set the goals of 20% cut in greenhouse gas emissions from 1990 levels, 20% of EU energy from renewables and 20% improvement in energy efficiency. Continuing its efforts with "A

policy framework for climate and energy in the period from 2020 to 2030"⁷, the Union established 3 key targets:

1. reducing greenhouse gas emissions by at least 40% compared to the levels of 1990
2. increasing the proportion of renewable energy sources to 27% of final consumption.
3. improving energy efficiency by 27%.

By achieving the latter, the EU could transit into a low-carbon economy, as it is discussed in the "Roadmap for moving to a competitive low-carbon economy in 2050"³. The decarbonization of the European economy is a keystone for the European environmental policy.

Concluding remarks

As far as the Paris Agreement and the COP22 are concerned, the EU seems determined to accomplish its commitments. The European Parliament 8, following the COP22 urged the need of "*a reform of the EU emissions trading system, a new effort-sharing regulation, and a regulation for emission reductions in the land-use sector*". Furthermore, the Parliament Suggested a reevaluation of the EU budget in order to be able to contribute in the USD 100 billion international climate finance goal of the developed countries (European Parliament, 2016).



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China's environmental policy

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Chinese government, realizing the effects of climate change, has adopted an eco-friendlier strategy with policies that promote electric mobility and investment in new technologies (Hilton, Is.).



Source: Asian Development Bank

China is not only the world's second largest economy but also one of the two biggest carbon emitters in the world. In 2015 China's CO₂ emissions accounted for 29% of global CO₂ emissions, while the country is now forced to face the environmental consequences of the accumulation of greenhouse gases in the form of air, water and soil pollution. Since 2013 and under the command of the Communist Party, the

COP22 and China's 13th Five Year Plan

During the COP22 negotiations in Marrakech, China pledged to lower carbon emissions in the next five years, while the deputy head of the Chinese delegation remarked that China would follow 'the five-year plan for cutting carbon emissions levels' (Wang, Y.). He was referring to China's 13th Five year plan for the environment, which promotes a cleaner and greener economy, with strong commitments to the protection



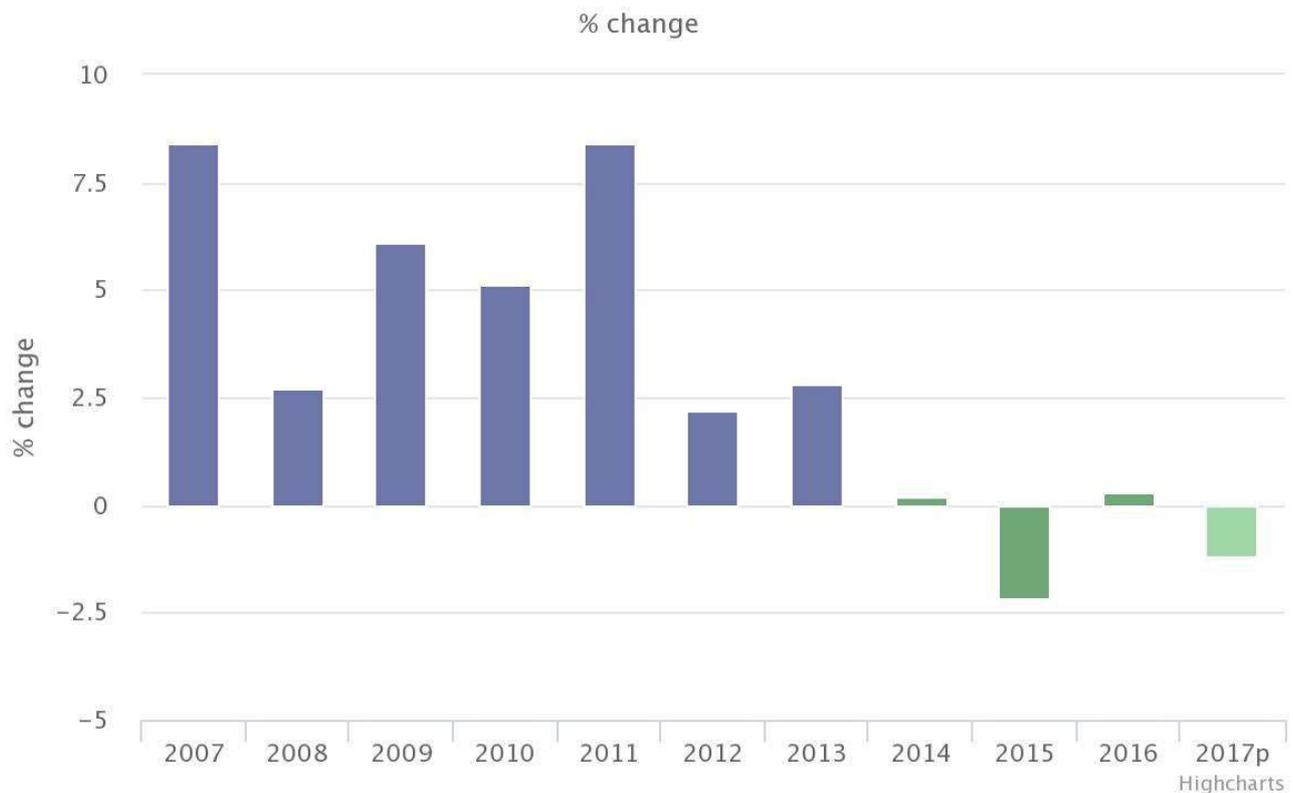
and management of the environment, clean energy and emissions controls.

Source: <http://energydesk.greenpeace.org>

To be more specific, through the five

(Wang, Y.). China has indeed implemented policies to reduce coal consumption, such as suspending more than 100 coal plants that

China CO2 emissions from fossil fuels



year plan China aims to reduce carbon dioxide emissions per unit of GDP by 40-45% by 2020 in comparison with 2015 and to limit primary energy consumption to less than 5 billion tons of standard coal. Other targets of the 13th Five Year Plan included the reduction of energy consumption per unit of GDP by 15% in 2020 as well as the reduction of water consumption by 35% by 2020.

Moreover, Xie Ji, the deputy head of the Chinese delegation in the COP22, said that China would continue “to wean the economy from coal fired to a more sustainable one”

were under construction, while the last coal fired power plant of those in Beijing was shut down in March of 2017 (Stanway, D.). According to the Climate Action Tracker, such measures have led to a decline in coal consumption, which has shown a decrease every year since 2013. Moreover, even though China is still highly dependent on coal, there are plans in the immediate future to replace coal with renewable energy resources, such as hydro and nuclear power. However, as there are no policies for other non-CO2 greenhouse gases, it is possible that



greenhouse gas emissions will increase until 2030.

Source: Asian Development Bank

China's slow growth after the Copenhagen Agreement in 2009 forced the country's policy makers to realize that the Chinese economy needed to follow the examples of its neighbors – South Korea and Japan-and become more energy efficient as well as increase production of higher value technologies. China has now turned to low-carbon technologies- as it is evident from the 13th Five Year Plan- and is grasping the opportunity to become a global leader not only as a manufacturer but as an exporter as well.

China is dominating not only as the largest investor in domestic renewable energy - In 2015 China invested \$102.9 billion in renewable energy- but also as the biggest manufacturer of solar-module and wind-turbines. (Slezak, M.) If China continues like this, it is estimated that it will probably hit its 2020 solar capacity target as early as 2018. (Boren, Z.)

China-USA, Developing Countries and Climate Change

After President Trump's announcement of US withdraw from the climate stage, one would expect that China's determination to combat climate change

would weaken. However, China is set on assuming the role of the climate leader and views climate change and the need to eradicate it as a stepping stone to reach economic growth. There's a huge gap between China and the US 'in the race to secure a larger share of the booming clean energy market', says Tim Buckley, an advantage that China is keen on exploiting (Slezak, M.). Furthermore, in the past China has provided developing countries with green low-carbon goods, such as LED tubes and solar PV power generation systems, a fact that helps China to establish itself as a dependable climate ally in the eyes of the global climate community (Zhang, L.).

During the COP22 negotiations China pledged to support and facilitate developing countries in order to aid them combat climate change. China's president, Xi Jinping pledged that China will provide 3 billion dollars in order to fund the South-South cooperation scheme, which is estimated to aid more than 20 countries by the end of 2025 (Karibe, P.).

With the adoption of the South-South Cooperation scheme, China plans to aid vulnerable countries by establishing pilot low carbon zones in developing countries. The Southern Partnership Incubator will help countries in the south to meet the targets of the Paris Agreement and reduce CO2 emissions, through the so called '10-100-1000' project, by establishing 10 low-carbon



zones and 100 carbon reduction projects in developing countries, and by providing training to 1000 people (Zhang, L.)

Concluding remarks

In conclusion, China's 180 degree turn -from being one of the biggest carbon emitters in the world to transforming into a 'green leader'- is something that no one would expect a decade ago. It is true that China has come a long way by recognizing the root of the problem and by investing in eco-friendly strategies. However, it has a long way to go, as it still remains to be seen if China's 13th Five Year Plan will work as envisioned.

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Russian environmental policy

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The environmental policy in Russia began after 1990 when the authorities realized the need to protect the environment and not to downgrade it. The development of technology and industrial production had as a result the increase of waste, effluent and gas emissions, which are directly linked to climate change. Russian environmental policy is not part of the country's high policy, although the oil and gas industry is one of the largest worldwide. The establishment of a large number of NGOs in the country has helped develop environmental awareness because of the challenges and risks that emerged. The external pressures for the country's participation in various forums about climate change and environmental issues highlight the need to develop a common policy for the protection of ecosystems and natural resources, especially from large industrial countries such as Russia.

The impact of climate change in Russia

The Russian Federation is the largest country in the world by surface area and the ninth most populous. Therefore, it is directly affected by the climate change in environmental, economic and human level. Rich in oil and gas, Russia is a country-supplier in the global energy market. So far the country hasn't faced any specific environmental problem, there are however concerns about any effects that could affect the production of energy, infrastructure and transport. Effects of the climate change could be detected on the ecosystem of the country, the low runoff and their drainage.

Russian environmental policy before the Kyoto Protocol

The beginning of the discussions on climate change in 1990 coincided with a period of confusion for the Soviet Union because of the possibility of collapsing, which occurred a year later. Therefore, the framework convention of the United Nations on Climate Change in 1992 found the former Soviet Union split in many smaller states and the newly established state of Russia participated for the first time in the international negotiations. At this point, the environmental policies were largely guided by the international environmental agenda.



From the Kyoto Protocol to Paris Agreement

On December 11, 1997 the Kyoto Protocol was adopted in the international conference in Japan. In the Protocol was implemented the objective of the UNFCCC (United Nation Framework Convention on Climate Change) to fight global warming by reducing greenhouse gas concentrations in the atmosphere. Industrialized countries were required to reduce emissions by 5% compared to 1990's levels. Russia was among the last countries to ratify the Protocol which entered in force on 16 February 2005. The country was not initially agreed with the commitments because of the interests affected by the measures. Nevertheless, Russia actively participated in the Kyoto initiative, although there were many doubts about whether the human factor actually affects the climate change.

In the Copenhagen conference on climate change President Medvedev pledged to adopt a "Climate Doctrine" for the reduction of gas emissions by 2020. In 2013 Russia joined the "Action Plan on Climate Change for the Barents" in cooperation with Sweden, Finland and Norway to reduce the impact of climate change in Arctic, but without any specific commitments for the country.

In 2015, the 21st Conference of the Parties of UNFCCC took place in Paris and an agreement was adopted by consensus on

December 12, 2015. The agreement which was signed by 195 countries – including Russia – is the first-ever truly global and legally binding climate agreement. It represents the first major agreement of the 21st century defining a global action plan to limit the increase in global temperature to a level less than 2 °C to avoid dangerous climate change. Unfortunately, Russia has not ratified the agreement yet. Instead it has set a timetable which would delay the ratification for at least three more years.

The conference on Marrakech (COP22): refusal to cooperate and a possible ally

A year after the conference in Paris took place the annual UN climate conference on Marrakech. Alexander Bedritsky, Russia's envoy on climate change confirmed that the country does not intend to ratify the Paris Agreement in the near future, citing the need to assess the impact on the Russian economy. It is obvious that the environmental policy is not a burning issue for the Russian government.

After the election of Donald Trump as President of the United States in November 2016, climate change skepticism found ground. Trump denies the phenomenon of global warming and refuses to abide the Paris Agreement. This way, a friendlier framework of cooperation between the US and Russia is created. The possibility of an alliance with the US may make the ratification of the



agreement by Russia even harder and it could cause additional problems in taking measures on climate change. And as Russia is the fifth – largest emitter of greenhouse gases in the world finding an ally as powerful as the US, cannot but raise concerns about the future.

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COP22 and the Developing Countries

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The term “developing country” is differently interpreted since indicators like social welfare, economic development, conditions of life, level of education and justice are used to categorize the countries. Taking this into consideration, developing countries are the states which are more vulnerable to climate change, but at the same time, poor and incapable to confront the threat.

In the framework of the Paris Agreement or COP21, 197 countries have agreed to take measures in order to reduce the rate of global warming under 2° Celsius, ideally to 1.5°C (Herrmann, 2017). The Marrakesh Agreement or COP22, which took place in 2016, refers mainly to the implementation of the Paris Agreement. Thus, the parties need to collaborate and clarify the methods and means in order to execute the agreed.

The principal objective of the developing countries is to mitigate their greenhouse gas emissions and at the same time, to maintain their rate of development. Many of them aim to cover their energy

consumption by renewable projects. Those megaprojects have already begun in the African continent providing an advantage to alternative economic growth (World Economic Forum, 2017).

The impact of climate change on developing countriesThe economic impact of climate change is immense as an important part of their economies is concentrated on the agricultural activities (Wade, 2015). Adaptation is crucial in the Marrakesh Agreement because developing countries may face a security risk by food shortage and water scarcity as well as by environmental degradation. Climate change and technological revolution not only will increase the gap between developed and developing countries but will lead to an irreversible situation.

In other words, the adjustment to the climate protection initiatives is important to them in order to prevent the damage. According to Standard & Poor’s Report in 2014, “Climate Change is a Global Mega-Trend for Sovereign Risk”, the parameter of climate change can evolve to a security issue, related to sovereignty (Wade, 2015).

Initiatives during COP22

Firstly, the “Adaptation Fund” assists the developing countries to adopt and fulfill their commitments. Since 2001, the Adaptation Fund has provided USD 358

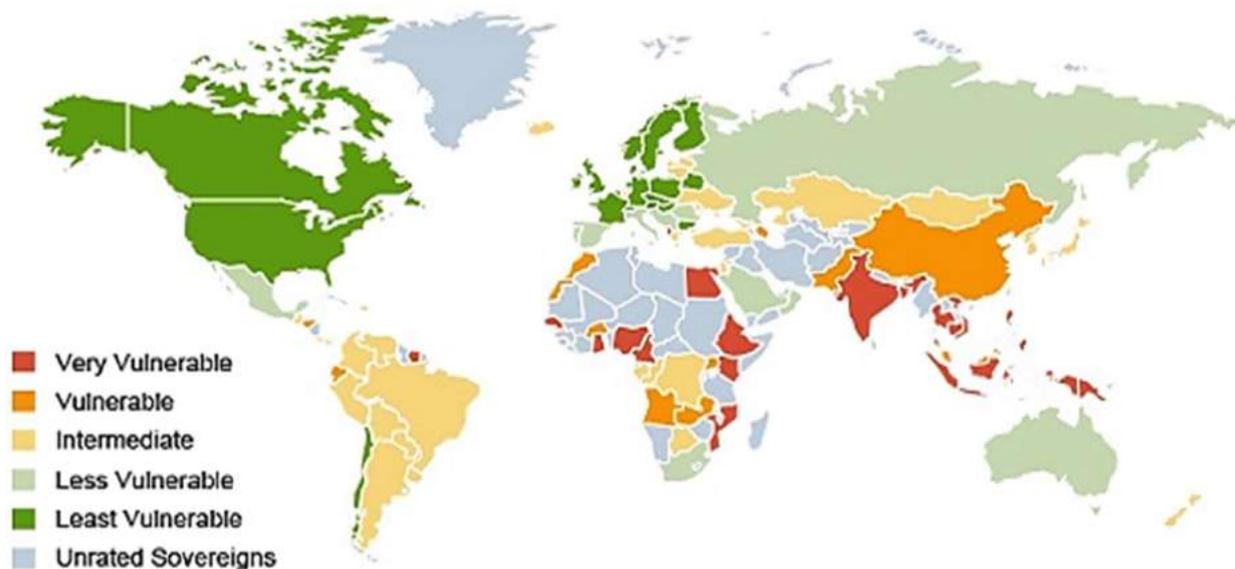


million in order to help poor regions to combat the negative effects of climate change (Herrmann, 2017). However, U.S.A. does not participate in the Kyoto Protocol and consequently, there are some reservations regarding the Fund's role under the new American presidency. Secondly, the "Green

developing countries (Nations Take Forward Global Climate Action at 2016 UN Climate Conference, n.d.). Additionally, developing nations have regularly requested the technology transfer and the exchange of knowledge between them.

Furthermore, the elimination of the

Potential vulnerability to climate change



Source: Standard and Poor's, 2014

Climate Fund" functions since 2010 financing the developing countries' effort to adjust. Lastly, the "Adaptation Committee" monitors the process.

There are also initiatives which aim to enhance the transparency network. During the negotiations, seven developing countries agreed to provide access to their internal procedure of adaptation. Even more, 11 developed countries have agreed to a further "Capacity-building Initiative for Transparency" donating USD 50 million to

negative effects caused by climate change is equally important. At this point, the initiatives lay emphasis on the enhancement of deprived areas within the framework of climate justice (Zhu, 2016). As a result, in the Marrakech Agreement, the "National Determined Contributions or NDCs" are also determined. The parties need also to send reports sharing their progress. The bilateral approach towards developing countries aims to provide "flexibility" and raise their adaptation efforts (OUTCOMES OF THE U.N. CLIMATE CHANGE, 2016).



Moreover, developed countries have committed to finance developing nations with 100 billion per year by 2020 (OUTCOMES OF THE U.N. CLIMATE CHANGE, 2016). Indeed, finance is as important as the control of financing procedure through frequent reports. However, there are some practical constraints. On the one hand, "The first review of the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts" suggests ways of improvement and protection from intensive phenomena in defenseless regions (Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts, n.d.). On the other hand, financial aid is unsure as many developed countries face an economic stiffness and internal disturbances. Therefore, the skepticism for global initiatives will soon question the continuation of assistance.

Comparison between developing- developed countries

Nowadays, regions like Latin America, Africa, Middle East, India and China are mostly affected by climate change (Busch, 2015). In reality, there is a clear responsibility regarding the main polluters. At first sight, the developed world and specifically, U.S.A., the European countries, Japan, Russia and in general, the industrial world is responsible for the emissions until the development of

emerging countries (Busch, 2015). However, at this point a paradox occurs as many developing countries belong to the greatest polluters. Probably, the explanation is that emerging countries need to consume fossil fuels, in order to rapidly develop their economies and maintain their economic boost.

Concluding remarks

To sum up, developed countries demand more control, transparency and equal liabilities. However, developing countries mention the partial financial aid and technological transfer from developed to developing world, that is to say, developed countries have also difficulty to fulfill their promise (Zhu, 2016). Despite their differences, both developed and developing countries need to cooperate. On the one hand, developed countries are responsible for the augmentation of global temperature, if the human factor is accepted as a cause of global warming. On the other hand, developing countries are more exposed to climate change as they don't have the means to protect themselves and prevent its impact. The real question is whether developing countries will prefer the environmental protection in order to eliminate the effects of climate change or in advance, they will choose the economic growth.



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Cop 22 and Sustainable Cities

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Cities are responsible for 1/3 of greenhouse emissions and 70% of energy consumption according to World Bank mostly due to the fact that 54% and by 2050 66% of the world's population according to UN, lives in cities. Their contribution to fight against climate change and their commitment was conspicuous in COP22. They contributed and co-organized several sessions and summits but also engaged and signed roadmaps and platforms to tackle climate change.

What happened in Marrakech

On November 2017 the Climate Summit for Local and Regional Leaders took place along with other sessions such as The Global Covenant of Mayors for Climate and Energy and the second meeting of Commission for sustainable territorial development of the Euro-Mediterranean Regional and Local Assembly (ARLEM).

Announcements and signed recommendations come from Marrakech like [The Marrakech Roadmap for Action of Cities and Regions for Climate](#), the [2050 Pathways platform](#), and also in the [Low-Emissions Solutions Conference](#) showed that cities and



local governments are one of the policy makers of the multi-stakeholder engagement to tackle climate change and are engaged towards the transition.

2050 Pathways platform

The 2050 Pathways platform, launched by high-level champions of governments, corporations but also 15 cities of C40 coalition, provides support in governments and cities towards zero GHG, climate resiliency and sustainable development pathways.

The Climate Summit for Local and Regional Leaders

The Climate Summit for Local and Regional Leaders, was the second after Paris climate summit, had 1,100 participants from



114 countries, representing more than 780 local and regional governments. There was wide representation of 50 countries from Africa, as well as 11 representatives from Small Islands States.

At the Summit closing session, the Marrakech Roadmap for Action has been presented and submitted to contribute in the Global Climate Action Agenda.

This global roadmap for financing and localizing finance The Marrakech Roadmap for Action of Cities and Regions for Climate underlines the significant role of local and regional governments as partners of national states to support, design and implement national policies for climate change. It also highlights the need to local resilient and low-carbon infrastructure along with the need to financial support of local governments. For this reason, they recommend to strengthen the capacity of local and regional governments to take action, to support them in process, to fund them and change the global architecture of finance. These were the three dimensions of strategic actions for localizing finance for climate action. The roadmap concludes in two key actions. First, the participants announced that they would launch in 2017 (1 Jan 2017) a global campaign to push for localizing climate finance in the coming year. And second, they urged the creation of a global action framework for localizing climate finance by 2020. The

implementation of the roadmap will be overseen by the Cities Climate Finance Leadership Alliance (CCFLA), a network of some 40 development banks, foundations, and cities groups along with the Global Task force for Local governments.

The Global Covenant of Mayors and the Commission for sustainable territorial development

The Global Covenant of Mayors for Climate and Energy and the second meeting of Commission for sustainable territorial development of the Euro-Mediterranean Regional and Local Assembly (ARLEM) mainly co-organized by the European Committee of Regions showed that after the Paris Agreement the role of regional governments globally is crucial in tackling climate change. The Covenant of Mayors for Climate & Energy brought together 7,100 cities met at COP 22 voluntarily committed to implementing EU climate and energy objectives on their territory. That initiative, which brings together pledges from municipalities around the world, claims to be on track to reduce carbon emissions by 254 megatons before 2020, the same year that the Paris Agreement's targets go into effect for national governments. New signatories now pledge to reduce CO₂ emissions by at least 40% by 2030 and to adopt an integrated approach to tackling mitigation and adaptation to climate change.



The Commission for sustainable territorial development of the Euro-Mediterranean Regional and Local Assembly (ARLEM) gathering composed of 80 local and regional representatives from the EU and 15 Mediterranean partners. 'Energy and climate change in the Mediterranean Region' and 'Cross-border cooperation in the Mediterranean' highlighted the need to energy transition and cooperation across the Mediterranean and foster the dialogue between regions and cities.

Low-Emissions Solutions Conference

The conference has co-organized the ICLEI-Local Governments for Sustainability (ICLEI) where the strategies and the implementation of local climate action were discussed, best practices and examples of how cities can be smart and sustainable. The big announcements like the Marrakech Partnership for Global Climate Action or the 2050 Pathways along with the participation of cities in several sessions and summits signifies their strong engagement and their alignment with national government policies for climate action. According to **Yunus Arikian**, global advocacy director at ICLEI – Local Governments for Sustainability only 50 percent of these national commitments have some sort of local or subnational action. This provides a great opportunity along with other initiatives, like the New Urban Agenda and Sustainable Development Goals, to increase

cooperation and engage in all levels of government and to put them on board for climate and sustainable urban development.

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COP22 and the Arctic

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Arctic is defined as the northern part of the Earth and the region which covers the North Pole. Climate change has played a significant role in raising awareness for the issues affecting the Arctic such as the Ice Melting, the Modification of the Soil and the Biodiversity. As a result, its designation as a region of emergence, due to global warming, allowed its entrance, as a matter of discussion, not only to the Conference of the Parties 21 (COP21) in Paris, but also to the Conference of the Parties 22 (COP22) in Marrakesh.

Overview of COP21 and Connection of COP21 regarding the Arctic

COP21 succeeded to create a document, under the supervision of the United Nations, which validated the essential participation of the main key players concerning the energy and the environmental sector, People's Republic of China and the United States of America. Basically, Paris Agreement constituted the

success of the United Nations to create a document welcomed by the majority of the states which aims at preventing the rise of the global temperature up to 2 degrees and to preserve low greenhouse gases.

However, how is the Arctic region truly connected with COP21 and Paris Agreement? Actually, the connection is only rhetoric and not practical. During COP21, only one panel concerning the Arctic region which was organized by the permanent members of the Arctic Council (Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden and the United States). The subject of the panel focused on the exploitation of long-term climate pollutants like lime methane, an issue which is not related at all to the problems that the US Center presented during COP22 in Marrakesh (COP21, 2015)

COP22 and Arctic

During COP22, the U.S. Center took on the presentation of searching facts on how climate change affects the Arctic region. As it has been already mentioned, the Arctic is the northern part of the Earth. Due to its location, the rise of temperature is double as compared with



all the other parts of the world. That problem, coupled with the long-term global warming from early 19th century, has driven to drastic changes of the Arctic Sea and the ice thickness. The rise of temperature also affects Greenland, with the apparent consequence of the decrease of “ice stock”, especially around the coasts (The US Center, 2016).

Regarding sea level rise, the scientific community is not absolutely certain if the ice melting affects it even if there are no facts for the opposite. A phenomenon which certainly affects sea level for the last 22 years is the crack of the ice creating huge icebergs sailing in the oceans. This phenomenon burdens the “sea level rise” problem with recent example of the crack of the ice shelf *Larsen C* in Antarctica, a piece of ice with range approximately 52 square kilometers (Sumner, 2017). Lastly, according to research made by the U.S. Center, a warmer Arctic could lead to a colder America. This may be caused by the temperature rise in Arctic. Due to the warmer weather in the northern part, the air circle will expand southern to America, making the climate colder during winter

even at the southern parts of the United States (NASA).

Considering the ecosystem, it has to be highlighted the dramatic decrease of sea ice, already from 1979, with a range of more than the 6 biggest countries of Europe (except Russia). This reduction tremendously affects the biodiversity of the area, especially seals and polar bears. Furthermore, thawing permafrost has started to collapse, creating problems to infrastructure and making more difficult the life of indigenous people (NASA).

There is only one thing that could be considered as positive and that is the opening of new sea routes for future trade exploitation. This may help the trade of northern countries but the level of danger will remain high due to the existence of smaller icebergs which may cause problems to regular maritime cabotage lines such as delays or even crashes with ice shelves.

Concluding remarks

Arctic faces a wide range of problems due to climate change and as a result it will continue to follow the dark path of destruction. Both COP21 and COP22 were



considered important but their contribution to the issue of

people of Arctic but also for the citizens of the whole world.

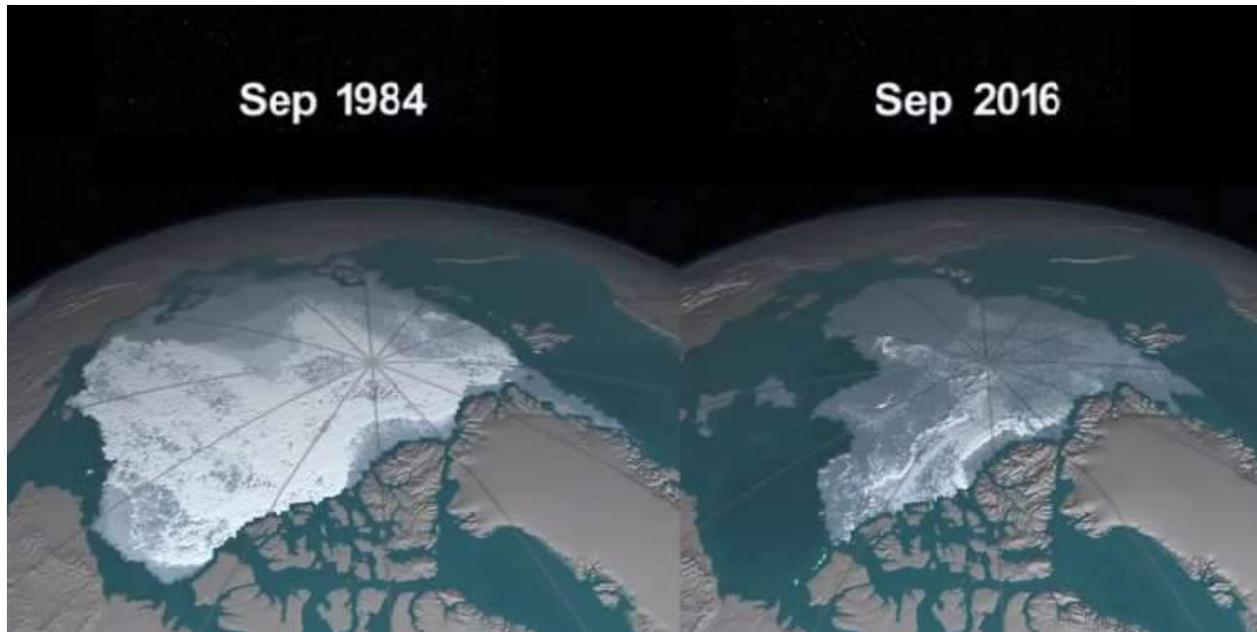


Photo Source: Older Arctic Sea Ice Disappearing Retrieved from: <https://www.youtube.com/watch?v=Vj1G9gghkYA&app=desktop>

Arctic remained general and rhetoric. Paris Agreement is hard evidence of this general dealing of the problem due to the absence of restrictions and sanctions for the member-states even though it is a binding document. To conclude, except from the *time to time* panels which have been created for the Arctic, short term and long term measures have not been implemented for the substantive solution of the problem, perpetuating a situation that can create dramatic living conditions not only for the

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Continued from page 2...

Participating in the COP22

Interview of Dr. I. Tsipouridis

Ioannis Tsipouridis, Chairman of the Hellenic Scientific Wind Energy Association ('ELETAEN')

This means that in a COP, in general, we can see official delegates, which represent countries....

Mostly countries, but other interest groups which have been approved as well.

Along with private companies, multi-national companies, which participate as private delegates?

Of course. For example, aviation and shipping interest groups, companies etc. are considered as official delegates. There are those whose sectoral interests have been officially accepted and are on equal footing at the table of negotiations. On the other hand, there are others who can only make their presence felt through their actions. They are and act as Pressure groups. I specifically remember groups from Africa, and this is the reason I said earlier that they add much needed colour, who dressed in their traditional uniforms,

singing, shouting and laughing attract attention to their plight. For example, that the rise of the global temperature is already happening for them, and it is close to 2° C! As a result, they are already dealing with the consequences of climate change and have every reason to keep up and increase the pressure. Concerning this particular scientific fact, the global effort of moving the target-goal to 1,5° C is being broadly "adopted" and it would be an excellent development if it officially became part of the Paris Agreement, but personally, I doubt this will happen soon.

Summing up, what is basically happening during these 2 weeks?

A vast number of negotiations sessions takes place. The official ones with the participation of the recognized parties (countries, E.U., big industrial groups, even banks, etc). and the unofficial ones, where NGOs are putting together their case, hoping to be heard by the COP of kinds. The number of sessions is incredibly huge and you can only attend a very limited number during a day! Personally, using a smart phone application, I realized I walked 10-11 kilometers a day, just going from one room to another. from 08 00-21



00 every day of the COP conference, attending meetings and taking notes. In addition to this, you can enjoy some of the treats that are offered in the breaks and attend the tens of parties that take place each day after the sessions. It is a huge global colorful event with thousands of people present.

COP22 was the first after COP21 and the Paris Agreement. What was the ambience like one year after it?

The ambience in Morocco was shaped by the Paris Agreement, because it was the COP which was obliged to try to create and put in motion the mechanisms for the implementation of the COP21 decisions. However, we should mention the fact that COP22 was significantly affected by President Trump's election, which could be described as a huge obstacle for the entire process. The day after the election, I was attending a workshop where some Americans were among the presenters. Three of them, I heard them myself saying how sorry and ashamed they felt attending this climate conference while Trump was elected President, a man who is expected to withdraw U.S.A. from the Paris Agreement (which was officially announced a few hours later). The whole

procedure was significantly affected by this fact. Concerning us, as BINGO group, with a great number of Americans as members, it became the main issue of discussion. First of all I should explain our operation tactics. Every morning we had a meeting between 08 00 and 09 00 where we discussed certain issues and matters of



the daily agenda, we exchanged opinions and decided which meeting each of us would go. The day after the elections, the Americans were preoccupied with the election result. However, despite the disappointment it was commonly agreed that renewable energy sources economy and the climate change technology have advanced and developed so much, that Trump not only won't be able to ignore them, but that will be forced to go back on his decision. It's important to note that



this early appraisal of the situation remains even today the accepted by the majority of analysts as the most likely outcome. This remains to be seen even today so many months after the elections

By the way, according to BBC, Russia will after all ratify the Paris Agreement, taking advantage of the “gap” created by Trump’s decision.

Now that you mentioned it, Russia was presented as a possible ally for Trump and his environmental policy and decision against the Paris Agreement.

Indeed, Russia was always uninterested and apathetic concerning the issue of climate change. However, it looks like Russia will eventually ratify the Agreement. I was really impressed and happy by this move. It looks like Russia wants to isolate Trump. Let’s not forget that after all, Russia depends totally on fossil fuel and nuclear energy. Even Greece outruns Russia in wind energy installed capacity power.

Aside Trump, could we say there was any progress on the Paris Agreement’s main goals? Was any progress made during this past 1,5 years?

Yes, progress was made, but progress only in theory. Almost everything agreed in Paris must be funded to be realized and these funds must be transferred where needed. And it is mostly needed in countries where at this very moment they deal with climate change. A serious issue in the negotiations was the “damage and loss” sector. This was a big negotiation issue and legal texts were produced passing on the difficult decisions for COP23. Although after COP22 there was broad satisfaction with the results it cannot in any case be compared with COP21. Lets not forget that in Paris, a great number of global leaders attended the conference and this led to the global agreement and the signing of the Paris Agreement. Even Alexis Tsipras was there. No such thing happened in Marrakesh. Progress was definitely made, but to see the results of all the work done in COP22, we should wait for the official papers to be published and the follow up in COP23.

Could we say that the absence of strict obligations for the parties reveals the non-binding character of the Agreement?

It is my belief that in order for the Paris Agreement to be ratified by such an



impressive number of countries (we should keep in mind that the Kyoto Protocol took 8 years to be ratified), this non-binding character was necessary. The fact that Trump will withdraw U.S.A. from the Agreement is the most obvious example. There should be penalties for such an action, which would prevent him or anyone from even thinking about doing it. Being able to withdraw without any consequence, reveals how binding the Agreement is. Along with the fact that all the efforts are based in everyone's good intentions. For example, the official goal is the 2° C, but everyone is wishing that the goal is set at 1,5° C. Wishing it is not binding..

At this point, we can refer to the contrast between developed and developing countries. Developing countries ask for financial aid to keep up with their commitments while the developed ones, especially referring to U.S.A., E.U. and China, claim that they will help them. So far, only China has officially committed to help.

The gap between developed-developing countries existed before the Agreement and will continue to exist after it.

Specifically, concerning emission's reduction levels, the problem is huge. For example even China should decide what to do, when the necessary reduction in China's emissions means restrictions to its levels of growth. India has the same problem. I believe Obama's presence was important regarding this issue, especially after Copenhagen's failure, where he did not take the opportunity to lead the world's fight against climate change. If Obama was still President, things would be different. This is an issue where leadership is a crucial factor. A global leader must emerge, a role which China is desperately trying to assume. I cannot say if China will be ever accepted as a global climate leader, who will be able to "deal with" the non-binding character of the Agreement. Developing countries remain an unresolved issue.

Now, concerning international issues, climate change, having entered the forefront of international politics over the past few years, you think is largely influenced by major player's decisions and policies, as it is happening in all major international policy issues?



I think yes. And that's going to be seen by America and Trump, in the new era in relation to Obama. Of course, there are also countries that remain indifferent on this issue. However, in this point I repeat my reference to the leaders. Leaders have always determined the fate of the planet. There will never be a teamwork decision. The way that the climate change issue and the Paris Agreement will evolve from now on will be determined by Trump, Putin and China. This can already be seen from COP22.

Could we describe as "big players" private groups or companies? For example, the multinational companies or banks that you previously mentioned?

Of course, and sometimes with a pleasant surprise. It was impressive for me to listen to an insurance company representative speak with such passion about how to protect humanity from climate change. While previously insurance companies did not really pay special attention to the issue, having to deal with climate change as a risk for which they pay and get paid, there was an entire department of this particular large insurance company that

had devoted itself to the issue and talked passionately about what we should do. When economic concerns decide to deal with climate change, one can be more optimistic about the future.

What do we expect after Trump leaves the agreement?

I personally expect a great deal of reaction inside the United States. Anyway, Trump is constantly giving reasons for reaction to his politics, like for example it is happening now with his Russian relations. I am inclined to believe that the solution will present itself sooner than later, with an impeachment which could lead to Trump leave office. Of course, one can argue that even if that happens and the vice president takes over the office, that nothing will change in USA politics. It is worth mentioning that at this point there are more workers in the USA photovoltaic industry than there are in all fossil fuel sectors together. This is a positively shocking outcome that is a game changer. The economy by its own will apply pressure to the situation. Bill Gates, Google and Microsoft have all invested in renewable energy resources and they go for full coverage of their energy needs by



green energy. All this will create a critical mass of pressure, overturning Trump's decision and climate denying politics.

Is there any possibility that this move may drag other countries to leave the agreement?

There is no danger from the small countries. Most of them suffer already from climate change so they do not want to leave the agreement. Now, concerning the bigger countries, most of them, at least the European ones, are in favor of the Agreement and wouldn't dare to leave, for a number of reasons including their economies and social pressure. Also, Putin's decision to ratify the agreement is in a different direction. India, Brazil (BRICS countries) are already in strongly and Australia the same. I don't think that there is another country that will contemplate leaving the agreement and that's why I believe that Trump's decision will not drag other countries out of it.

EU and China have already stated that after Trump's withdrawal, they will take a leading role, as the withdrawal is a major loss for the agreement itself, but it's not the end of the world.

On the one hand, we could say that it is "the end of the world". If the U.S.A. withdraws from the agreement, the most important negative development will be that the U.S.A. will withdraw from funding climate policies. On the other hand, the U.S.A economy will remain within the framework of the agreement. They will not stop, for example, using wind turbines. It is likely that renewables growth politics might change, state subsidies might be less. So, what would that mean in practice? A temporary slowdown of growth in the sector. This one could argue will make the E.U. happy because it can recover the leadership that it once had. China is more interested in its international image rather than the climate I think; it is simply trying to establish itself into international politics by using the gap of power created by the withdrawal of the US from the agreement. My personal assessment is that the U.S. will return to the agreement.

Will you be in Bonn for COP23?

I hope so. .



What to expect at COP23?

I suspect that in Bonn, the Trump topic will set the agenda. The world is already getting ready for Bonn. Trump's decisions until the conference will be that factor that will determine to a large extent what will be discussed. And because it will take place in Europe, Europe will take advantage of it to take the leadership back. China will also play its own game at the same time. The main thing though, is that we don't have the luxury of time. We must act immediately to tackle the issue of climate change itself and not let politics dictate the agenda. We should not put the cart before the horse.

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