SPECIAL ANALYSIS

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Climate change: the Paris agreement is just a beginning

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Introduction

The 21st conference of the contractual parties to the UN Framework Convention on Climate Change took place in Paris from the end of November to the start of December.

Nearly 50,000 delegates came together from over the world through the negotiations on the creation of a new global climate agreement that is to replace the Kyoto Protocol and involve in the whole planet for the first time in the fight against climate change.

The text of the agreement was signed on 12 December by the representatives of 196 world countries after 13 days of complex but constructive discussions. Many world leaders consider the conclusion of the agreement to be a historic moment and a turning point for the entire world.

However, only the coming years will determine whether the Paris Agreement is an effective weapon in the fight against climate change or an empty political gesture.

Climate change and man's impact

The agreement was adopted in the context of increasing understanding of the serious and often irreversible impacts of climate change. This is caused by higher concentrations of greenhouse gases in the atmosphere, particularly carbon dioxide. As analyses of glaciers have shown, the release of these gases into the atmosphere usually occurs as part of natural processes and their concentration during the last three ice ages was variable.

In recent centuries, however, greenhouse gases emitted from the consequences from human activities have increased. These are anthropogenic emissions that most often take place during the burning of fossil fuels, especially coal.

In sum, there is a constant increase in the concentration of greenhouse gases in the atmosphere occurring which leans the imaginary climatic scales in a direction in which humanity will be in danger. The actual concentration of carbon dioxide in the atmosphere is the highest it's been in the last 650 years.

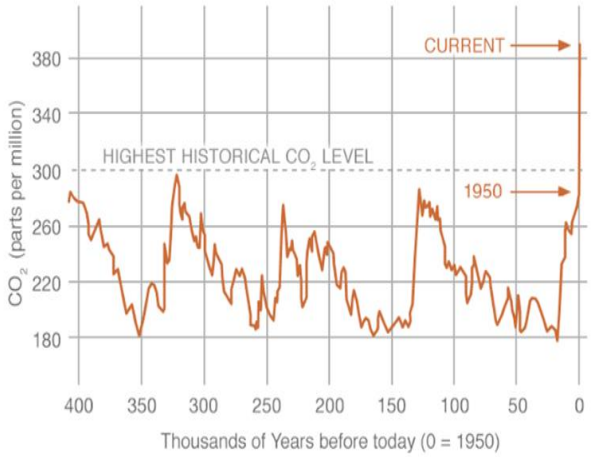
The greatest contribution to the creation of emissions is from the energy sector. Also noteworthy is the agricultural sector which with 11% is the second greatest producer of greenhouse gases. According to other calculations it is up to 15%.

A substantial amount of agricultural emissions (up to 65%) are created through cattle farming and the use of natural and synthetic fertilisers. For the record, 1kg of beef produced corresponds to 3 hours of driving a car, say experts.

Across the scientific community the prevailing opinion is of the necessity of maintaining global warming at a limit of 2°C above the pre-industrial age. At such temperatures some irreversible changes will occur, although sustainability of life on earth will be maintained.

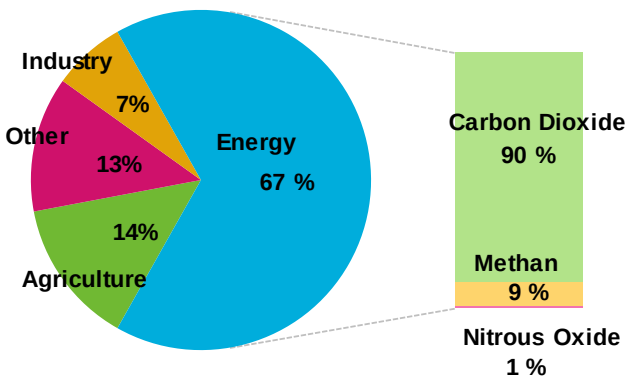
To illustrate, the planet warmed by 0.85°C between 1880 and 2012, while 2014 was the warmest year in history and 2015 will probably exceed that.

Growing Carbon Dioxide concentration in atmosphere



Source: NASA 2015

Greenhouse gas production by sectors

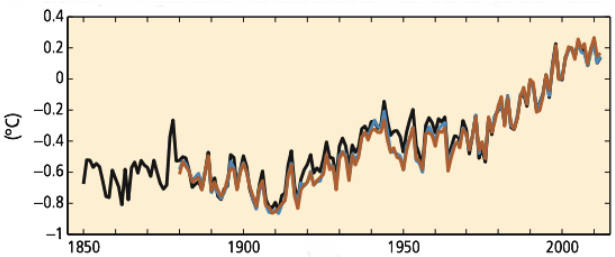


Source: International Energy Agency 2015

Increasing temperatures will melt glaciers, ocean levels will rise, species of fauna and flora will disappear, and people will migrate.

According to NASA, global ocean levels have increased over the last 100 years by nearly 18 centimetres and in Greenland alone 287 billion tons of ice have disappeared.

Average growth of the global temperature



Source: Intergovernmental Panel on Climate Change

The Paris climate agreement is only the start

The international community wants to maintain global warming well below 2°C and closer to 1.5°C in the just approved climate agreement. By mid-century we will then achieve a balance between produced and absorbed emissions. The agreement's climate target is common but the routes to achieving it are various. Individual national state commitments will form its basis.

Each state (or alliance of states) should develop and subsequently fulfil their town reduction targets. They should update their commitments on the basis of new scientific findings and available technology every 5 years. The first voluntary re-evaluation is planned for 2018, and the first mandatory one in 2023. The targets, however, will remain voluntary and there are no penalty mechanisms. At the same time, the agreement respects nationally specific conditions and sets up (financial) mechanisms so that climate actions occur all over the planet.

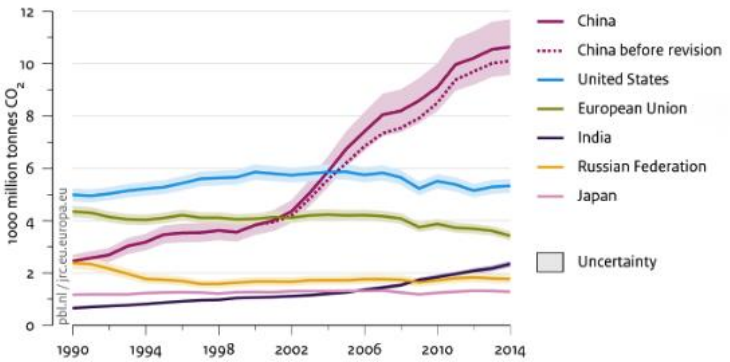
This is the "common but differentiated responsibilities" principle which respects the fact that industrial countries have historically contributed essentially more to the growth of greenhouse gas emissions in comparison to poorer states. The great diplomatic challenge in negotiating the agreement was the persistent disputes between developed and the developing countries. It is long no longer true that the main polluters are only the rich states. If the agreement is to have any meaning, all states must participate in it, especially developing countries.

Their participation is nevertheless subject to financial aid from developed states as compensation for the costs associated with emissions reduction and the impact of climate change. The result is a pledge for the voluntary allocation of at least $100 billion annually beginning in 2020. The money is earmarked for measures for adapting to climate change in developing countries. The main instrument will be the Green Climate Fund and the poorest countries have easy access to finance.

The world now stands before a great challenge. The agreement must be ratified by at least 55 countries responsible for at least 55% of global emissions. The overall agreement is indeed binding, but the commitments ensuing from it remain voluntary and are in the hands of each state, which may be a problem.

Moreover, in the period prior to the Paris conference states had to come up with their own proposals for reducing emissions. But even after adding up all the submitted proposals it was clear that they would not lead to even 2°C, let alone the newly preferred 1.5°C target (2.7 – 3.5°C is spoken of). National commitments should now be increased if the agreement is not to remain on paper only.

CO_2 emissions in TOP 5 emitting countries



Source: The Emissions Database for Global Atmosheric Research

It will greatly depend on the long-term willingness of individual states to live up to their pledges. The fact that it doesn't have to be a difficult journey is indicated by signals from business. As part of the conference, the establishment of a private and public sector alliance was announced for investment in research and development of clean technology and limiting dependence on

fossil fuels. In addition, green technologies have for many years already been the fastest developing energy sector. It is expected that investment in green jobs in the EU could form and maintain 5 million jobs by 2020.

The solar sector in the USA generates jobs 10x faster in comparison with the rest of the economy. A new vacancy is established there approximately every 20 minutes. By 2020 there is expected to be a doubling in the global industrial market in the environmental area in comparison to 2010. The fight against climate change has a market potential and the just concluded agreement creates a stable framework for investment in clean technologies. It is now already clear that the story of the agreement's acceptance is not ending, but only just beginning.

The European Union: An ambitious climate player

The EU is responsible for 9% of global greenhouse gas emissions (China 25%, USA 11%). In the area of climate policy it has been an ambitious player for many years already, which was also reflected during the negotiations in Paris where it pledged a 40% reduction as a whole by 2030 in comparison with 1990.

The intended contribution is based on its own climate strategy, which has been entrenched for many years. Historically, the first plan of the European Union was to disadvantage fuels with high carbon content via a carbon tax. This should have led to a dampening of their use and the facilitation of cleaner energy sources.

The carbon tax, however, did not get past the resistance of member states at the time and because of this the way was opened up for a new approach. At the start of the new millennium a proposed European emissions trading scheme (ETS) was introduced which reduced emissions on a market basis (see the box on page 12).

The climate policy was gradually expanded to renewable resources and energy efficiency. And their introduction led to a reduction in greenhouse gas emissions.

Thus targets to 2020, 2030 and a long-term vision for a low-carbon economy by 2050 were gradually established. The symbolic culmination of the EU's climate and energy ambitions is embodied in the Energy Union. This was founded in February last year and is the responsibility of the deputy chairman of the European Commission, the charismatic Slovak Maroš Šefčovič.

The Energy Union includes all the activities of the EU in the energy and climate field within one great overarching project. It is undisputedly the greatest energy event of recent years. We can say with some overstatement, however, that the new climate agreement from Paris and the Energy Union have two things in common. Both impact on climate protection and both remain for the meantime on paper. The full development of the Energy Union is expected in 2016. The year 2015 tended to be more of a marketing affair with the aim of familiarising member states with the essence of the project and collecting nationally specific data for the best calibration of the project's overall management. The basis of the Energy Union in the climate field is the extant climate-energy strategies setting targets for 2020 and 2030.

This 2030 target is currently a big European topic. The Climate-Energy Framework to 2030 approved by the European Council is gradually being broken up into specific legislative proposals and is the subject of negotiations at the European and national levels.

The first batch of legislation was published in June 2015 and is known as the summer energy package.

EU climate-energy targets to 2020 and 2030

Target	2020	2030
Greenhouse gas emissions reduction*	20%	40%
Share of renewable energy sources	20%	27%
Increase in energy efficiency	20%	20%

*Source: European Commission; * in regard to 1990*

It contains, for example, a revision of the ETS system and a communication message regarding the design of the electricity market. Another legislative package is planned for February. The core of it will be proposals relating to securing supplies of natural gas, gas contracts with third countries and a strategy for the use of liquefied natural gas.

In the summer there will then be a legislative package focused on reducing emissions in the sectors outside the ETS – agriculture and forestry.

New targets in the area of buildings and transport will also be introduced. A binding statement on the new design of the electricity market is planned for this autumn. It will undoubtedly be the most important event of 2016.

These steps are based on the timeline presented in February 2015 together with the Energy Union framework strategy.

The European Union will meet climate targets and uncouple growth from the production of emissions

Let's now turn from visions to data and let's look at how the stated commitments can be met. According to the latest data, the EU is on track to meeting all goals by 2020. For the goals to 2030, however, the situation is different. If the stipulated commitments are to be achieved in the coming period it will be necessary to increase efforts.

The legislation pending right now and its swift implementation shall be crucial in this regard. According to the latest data, EU emissions in 2013 were 19.8% lower in comparison with 1990 levels, which is on the brink of meeting 2020 targets. Thanks to the declining emissions trend it is highly likely that the target will have been met in 2014-2015 already. By 2020, a real fall in emissions of 24-25% could have been achieved.

In recent times, the development of emissions production has been significantly influenced primarily by the financial crisis. A slow-down in industrial production and demand for energy has occurred as a result. From the point of view of climate policy this has been a doubled-edged sword.

On the one hand, a significant downturn in the production of emissions has occurred through the temporary slowdown in economic activity. This is good news from the point of view of meeting targets. On the other hand, it's a short-term matter which moreover has negatively affected the ETS.

Upon the revival of economic activity a moderate increase in emissions has occurred.

In recent years, however, the long-term decline has continued. The period following the crisis is especially interesting. Environmental regulation is often maligned for reducing European competitiveness and endangering growth.

A decoupling of growth from the production of emissions, however, is clearly evident from long-term development and development in recent years. It is an important argument in the discussion over the meaningfulness of the decarbonisation of economies.

It is also true that it's not possible to generalise for an entire economy. It's true that some European sectors may be endangered more than others by environmental regulation. This is particularly so regarding energetically demanding industry, which may as a result of increasing costs move its production to countries with lower levels of regulation. This phenomenon is called "carbon leakage" and is is frequently discussed European topic.

The new Paris Agreement is a calming signal for discontented European industry. The whole world agrees on climate action and the EU will not remain alone in its efforts, which may give it a competitive advantage for reasons of investment already undertaken going to into friendly technologies.

An ETS story with a good ending?

The ETS functions on a "cap-and-trade" principle whose essence consists in setting an EU-wide ceiling for emissions in sectors emitting large amounts of greenhouse gases. This ceiling is recalculated as the number of allowances is slightly fewer than the overall measured amount of emissions produced by the facilities included in the scheme.

The number of allowances released into circulation is reduced each year so that a gradual reduction in emissions is achieved. Enterprises then trade in these allowances as part of lowering the amount. It's up to each of them whether they cover the emissions produced with the purchase of allowances on the market or whether they will carry out measures to limit their production of emissions. For the emissions market to function correctly it's necessary to have a sufficiently high price of allowances. Lower demand for allowances as a consequence of the economic crisis, together with the unexpectedly large influx of international credit for investment in green projects in non-EU countries and the over-evaluation of the real demand for credits by member states, however, resulted in the clinical death of the entire ETS system.

A surplus of about 2 billion allowances appeared on the market, which affected their price to such an extent that it is not a motivation for decarbonisation investment.

The purchase of allowances for practically free (around EUR 4-6 for an allowance as opposed to the planned EUR 30) was in short better than costly modernisation. The ETS has, however, gone through a series of immediate and structural revisions which will lead it back to operability.

As part of the process of "backloading", 900,000 million allowances have been temporarily withdrawn from the market since 2014. In the summer of last year a market stability reserve was in addition agreed. This is an automatic mechanism that will gradually remove allowances from circulation until such a time that their volume is stabilised at an acceptable level. Moreover, backloaded allowances will also be placed in this reserve.

The current pending long-term revision amends the parameters of the ETS so that it is in accordance with the emissions target to 2030. The purpose of the revision is to ensure a sufficiently high price of allowances which would incentivise decarbonisation. The future will show whether the revised ETS is viable. The growing price of allowances is a promising signal.

Conclusion

Climate change moves not only ocean levels, but also world policy. The situation is well summed up by Barak Obama, according to whom we are the first generation that will feel its impact and the last that can do something about it.

Climate change may appear a less urgent problem in comparison with other societal threats because its consequences are slow coming. However, it's very important to act now as the outcomes of climate action won't come over night.

The world now faces a difficult task and the Paris Agreement is a good start. It's true that the commitments of individual countries presented in this regard won't lead to this goal and it will be necessary to increase them worldwide. We are members of the EU which has been an ambitious climate player for many years already.

One can therefore expect efforts to increase existing ambitions which will be accompanied by a tense debate. Not all members of the European Union by far are on the same frequency in the meantime in the fight against climate change.

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