

Working paper

2015-22

CLIMATE ACTION BEYOND THE PARIS ACCORD

Stéphane DION

Chambre des communes du Canada

Eloi LAURENT

OFCE-Sciences Po et Stanford University

September 2015

ofce

Climate action beyond the Paris Accord

Stéphane Dion and Éloi Laurent ¹

2015-22

September 2015

Abstract

In this paper we propose to shift climate negotiations from the current logic of quantity to a logic of price. Our proposal brings together the logic of science-based efficiency and the logic of ethics-based justice. A carbon budget set to the two-degree limit leads to the establishment of a differentiated trajectory of gradually converging global pricing of carbon, each country freely determining the mix of instruments used to raise its price. Furthermore, our carbon price system addresses inequalities between countries (through modulations and compensations) and inequalities within countries (accelerating adaptation of financing).

Keywords: COP 21, climate negotiations, carbon price, climate justice

JEL: Q01, Q48, Q54

¹ Stéphane Dion is a member of Canada's House of Commons, former Minister of the Environment of Canada and was President of COP 11. Éloi Laurent is a senior economist at OFCE /Sciences Po (Paris) and a Visiting Professor at Stanford University.

Introduction: the Paris Paradox

After the release of China's "Intended Nationally Determined Contribution" (INDC) at the end of June and the final ruling of the EPA on the US climate action plan in early August, negotiation positions on the road to COP 21 are now stabilized. They point to a foreseeable paradoxical outcome of the Paris Conference: an unprecedented universal climate agreement that will not solve our climate crisis.

However, this paradox can be solved in large part by introducing, into these climate negotiations, the goal to develop a robust global carbon pricing system. The new system would rely on a few simple principles:

- the objective is to limit global warming to below – or around – two degrees Celsius above pre-industrial levels; a global carbon price must therefore aim to meet that objective;
- whatever one's opinion on the debate regarding the best way to levy a carbon price – tax or emissions trading – various countries have already picked their own path and trying to get them to fit the same mould would be unrealistic²;
- several countries have pledged to meet quantitative reduction targets (pledge-and-review strategy); so rather than asking these countries to abandon those targets in favour of a global carbon price, it would be better to show them that negotiating such a price would be a powerful means to meet – or even exceed – their targets;
- because the internationally agreed principle of "*Common but Differentiated Responsibilities*" would make it very difficult to set a single price immediately, it would be more realistic to consider a price convergence-based process stretching over a number of years, as proposed by such international bodies as the International Energy Agency;
- given that the developed countries have pledged to provide one hundred billion dollars yearly to help the most vulnerable countries deal with climate change, global carbon price negotiations cannot be used to cancel that commitment: on the contrary, they are a good means to meet – or even surpass – the commitment.

Before reviewing those points in more detail, let's see by the numbers why the current climate negotiation system is fundamentally flawed.

² In 2015, 40 national entities and 20 local jurisdictions have adopted a carbon price according to various modalities, for the detail of those measures, see http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2015/08/26/090224b08309a09a/4_0/Rendered/PDF/Carbon0pricing0e0released0late02015.pdf

1. The Unflattering Carbon Footprint of Climate Negotiations

It is a well-known fact today – at least in academic circles and a significant segment of the international community – that **greenhouse gas emissions (responsible for the climate changes observed in the second half of the 20th century and predicted to continue until the end of the 21st century) have increased during the last 25 years. The average annual increase went from 1 percent between 1990 and 1999 to 3.3 percent between 2000 and 2009. After a very slight decrease during the great recession, GHG emissions began rising again at an annual rate of 2.5 percent.**³

In a March 2015 communiqué, the International Energy Agency announced that emissions had decreased in 2014; but for the same year, data released by BP in June 2015 showed a slight increase of 0.5 percent. But that decrease (or slight increase), largely due to China's economic slowdown-driven reduction in coal consumption, should not be used to distract from the obvious observation that since 1997 and the signing of the Kyoto Protocol, the world's countries have been doing the opposite of what climate science recommends, causing global emissions to rise by more than 60 percent since 1990. As highlighted in the latest report of the Intergovernmental Panel on Climate Change (IPCC 2014), the disconnect between the intensifying climate crisis and stagnating international negotiations has never been wider.

With so much scientific evidence warning us against the catastrophic impact of climate change on human welfare, how can this discrepancy be explained if not by the inefficiency and ineffectiveness of the current climate negotiation framework?

The thinking today is that the 1997 Kyoto Protocol, which guided these negotiations following the United Nations Framework Convention on Climate Change (decided at the 1992 Rio Summit), has been a resounding failure. However, that is only a partial truth: in fact, Protocol-bound Annex 1 countries⁴ did live up to their commitments – albeit only by resorting to a sleight of hand that led us to understand why we must now change the system.

We know that in Kyoto, the most economically developed countries made a first – **and supposedly binding** – greenhouse gas (GHG) emission reduction commitment while the less developed countries were exempted from such commitments due to their lower development levels and

³ According to the Global Carbon Project <http://www.globalcarbonproject.org/>, which records emissions from fossil fuel consumption and cement production.

⁴ The Kyoto Protocol reinforces the 1992 Convention by committing Annex 1 countries to "individual, legally binding, greenhouse gas emission reduction or limitation objectives" (free translation). The individual objectives of Annex 1 countries are listed in Annex B of the Kyoto Protocol, which explains why the term "Annex B countries" is sometimes used instead of "Annex 1 countries".

lower GHG emissions. In 1990 – the baseline year for calculating emissions – the first-group nations (former Soviet Union members and OECD countries) were deemed responsible for 60 percent of the total GHG emissions. Under the Kyoto Protocol, these countries committed to reduce their emissions by approximately 5 percent by 2012, compared to 1990 levels. What is not always known today is that this objective was met. Even better, the latest available data show that the reduction almost reached 10 percent (even 15 percent according to some estimates). So the Annex 1 countries did twice as well as was expected of them.

The second and even more fundamental lesson is that while these reductions were taking place, a much more significant increase was rearing its head in the rest of the world. Between the early 1990s and early 2010s, the emission ratio of Annex 1 countries versus exempted countries reversed itself, with the Annex 1 share of emissions going from 60 percent of global emissions to less than 40 percent (see Table 1).

Table 1: 2013 CO2 Emissions

	Emissions, per capita	Total *	% of total
Annex 1	7.5	13.05	36.1
E-U	16.4	5.23	14.5
UE28	6.8	3.48	9.6
Russie	12.7	1.81	5.0
Japon	9.8	1.25	3.4
Canada	14.3	0.50	1.4
Non-Annex 1	3.5	21.04	58.2
China	7.2	9.98	27.6
India	1.9	2.41	6.7
South Korea	12.5	0.62	1.7
Iran	7.9	0.61	1.7
Saudi Arabia	18.0	0.52	1.4

* Emissions in GtCO₂, from fossil energy consumption and cement production.

Source : Global Carbon Project

The economic vision that informed the Kyoto Protocol is now totally obsolete. The problem that ails the current climate action framework, defined in 1997, is fourfold:

- An efficiency problem: the targets set in 1997 and instruments deployed since then (which are called "flexibility mechanisms" in the Protocol and include markets in pollution rights) are unable to stem the global greenhouse gas emission dynamics;
- A transparency problem: the quantitative, volume-based emission targets approach suffers from result-skewing biases. The baseline date that was chosen (generally 1990) is problematic for former USSR countries, some of which have since joined the European Union. Furthermore, the Kyoto Protocol keeps account of production-based emissions (emissions generated within a given territory) but not of consumption-based emissions (emissions from a country's production that are included, as incorporated carbon, in products consumed by other countries); thus the paradox of a text of which the letter has been complied with while the problem that text was supposed to solve was made worse by "carbon leaks".⁵
- An inclusiveness problem: henceforth, a binding international climate agreement must without fail include all major greenhouse gas emitters including – and especially – emerging economies (starting with China, which is responsible for almost one third of global emissions, and India, which could well see its still-modest emissions increase significantly as the country develops its production and consumption of coal);
- An incentive problem: volume-based emission reductions are seen by developing countries as a "carbon constraint", an unfair impediment to their economic development; and during economic crises, quantitative targets may become difficult to accept by developed countries.

Any reform proposal that aims to outgrow the current negotiation system must therefore offer solutions to the four problems. However, COP 21 is likely to operate within the Kyoto framework, the shortcomings of which all countries participating in the negotiations know well but are fearful to challenge, given the fragility of the global climate consensus.

⁵ While the Protocol-controlled, production-based emissions have decreased since 1990, consumption-based emissions for the same period increased by 0.5 percent. In the end, the increase in consumption-based emissions more than balanced the decrease in production-based emissions in Annex 1 countries. Emissions were transferred, not reduced.

2) COP 21: missing the wrong targets softly?

2.1 The prospect of a legally weak agreement

The key factor in achieving an appearance of success at the Paris Conference will be the way expectations are managed beforehand. That was the major failure of the 2009 Copenhagen Conference, where negotiators promised a global, legally binding agreement but could not deliver it in the end, causing a huge disappointment. This is why Paris negotiators have adopted a flexible position on the legal form of the final text that is likely to be “politically”, but not “legally” binding. Contrary to the Kyoto Protocol, the Paris text will thus probably be an ‘accord’ instead of a ‘treaty’, meaning that its legal power will be even weaker. As is well known in diplomatic circles, having an international text labelled as an “accord” is rarely a good sign.

This can indeed be seen as a victory for the US negotiators who have insisted that a legally binding text – which would require the Republican controlled Senate’s approval – has no chance of being adopted. While the Obama administration is trying to convince other parties that it can act on the basis of executive force (the rationale behind the final ruling of the EPA on cutting emissions from coal fired plants released in early August 2015), it is very hard not to consider climate policy in the US as conditional, the conditionality being that the legal challenges of the States are overturned by the Supreme Court. The US political polarization, not unrelated to the damaging effect of income inequality, is thus a drag on global climate policy.

This possible outcome is contested by the EU and its Member States, which, in their Intended Nationally Determined Contribution released on March 6, have called for “adopting a global legally binding agreement applicable to all Parties”.⁶ China is also calling for a “legally binding agreement” in a clear challenge to the US position.⁷

But as things stand, the US position is likely to prevail, meaning that the Paris text will be weaker, as a legal force, than the Kyoto Protocol – itself deprived of any sanction for non-abiding parties.

⁶ http://ec.europa.eu/clima/news/docs/2015030601_eu_indc_en.pdf.

⁷ <http://www4.unfccc.int/submissions/INDC/Published%20Documents/China/1/China%27s%20INDC%20-%20on%2030%20June%202015.pdf>.

2.2 The stubborn ambition-science gap

At the 2011 Durban Conference (COP 17), the parties acknowledged the gap between their commitments and achieving the two-degree Celsius objective. In the preamble of their joint statement, they expressed "grave concern" and promised to "raise the level of ambition" to bridge this gap. At the Lima Conference (COP 20) in December 2014, [the parties reiterated](#)⁸ the same "grave concern" about "the significant gap between the aggregate effect of Parties' mitigation pledges" and the goal of holding the increase in global average temperature below the two-degree Celsius limit. But the ambition-science gap has so far survived all virtuous proclamations.

Climate negotiations have revolved crucially around volumes of carbon emitted: under the Kyoto Protocol, a country's climate performance is assessed in terms of emission reduction targets compared to their 1990 levels and climate commitments are being framed in terms of emission reductions up to 2030 or 2050.

There are two reasons why this volume-based approach can be insufficient: it does not specify the instruments that are supposed to be used to match the volume targets (see section 1.3 below); and it does not take into account carbon flows, that are emissions resulting not only from national production, but also from national consumption. The gap between the two can be quite large: the EU has reduced its GHG emissions by close to 20 percent in terms of production since 1990, but by only 5 percent when consumption emissions are considered. A country like France sees its climate performance since 1990 completely turned upside down when consumption emissions are considered instead of production emissions.

But even if one withholds judgement on the potential efficiency of the volume approach, it appears to fall short on its own ambitions: Climate Action Tracker experts, assessing the announcements and commitments to track their compatibility with the two-degree Celsius threshold, currently conclude that existing and announced measures lead to an increase above 3 degrees and possibly as high as 3.8 degrees in global temperatures. The latest IEA assessment indicates that given the INDCs submitted so far and the planned energy policies in those countries that have yet to submit, the path would be "consistent with an average temperature increase of around 2.6°C by 2100 and 3.5°C after 2200".⁹ That EIA scenario assumes that countries will fulfil their climate commitments. However, we know full well that several countries will not honour their Copenhagen pledges and as a result, will not meet their GHG

⁸ <http://unfccc.int/resource/docs/2014/cop20/eng/l14.pdf>.

⁹ See p. 12 of: <https://www.iea.org/publications/freepublications/publication/WEO2015SpecialReportonEnergyandClimateChange.pdf>.

emissions reduction targets for 2020.¹⁰ So why should we assume that they will honour their Paris pledges?

2.3 The perils of commitments without instruments

The agreement reached by the Member States of the European Union in the fall of 2014 is a good illustration of the limitations of any strategy based on emission reduction targets alone, with no efficient and effective carbon pricing system. Indeed, the European "climate-energy package" can be considered a baseless pyramid: the greenhouse gas emission reduction target of 40 percent by 2030 is only supported by non-binding energy efficiency and renewable energy targets, which themselves are not underpinned by a true carbon pricing reform.

At the basis of the European agreement lies a dysfunctional, derelict carbon pricing system. The end result: commitments without instruments, and "ambitious" emission reduction targets suspended over a sea of ambiguity. The same can be said of most current national commitments that are lacking adequate instruments.

COP 21 needs to achieve a much more substantial outcome. National emission reduction targets must absolutely be accompanied by adequate and coordinated implementation tools, including a trial global carbon price. In other words, negotiators should aim for a "commitments+instruments" rather than a "commitments-only" agreement.

2.4 The need for climate justice

In Copenhagen (COP 15) and Cancún (COP 16), the developed countries committed to a contribution of 100 billion US dollars per year beginning in 2020, to help developing nations fight – and adapt to – climate change. A fund – the "Green Climate Fund" – has been created for this purpose, to provide developing countries with the substantial financial and technological assistance they require.

Developing countries take this commitment very seriously. They have made it known that no agreement will be possible in Paris without the conclusion of a clear plan for the delivering, through the Green Climate Fund, of the committed US\$100 billion per year by 2020.

Unfortunately, despite years of ongoing discussion over this agreed \$100 billion target, nobody knows how much each developed country is supposed to contribute. What we do know, however, is that raising such a sum will require private sector contributions. This will not happen in the absence of a fully functional, robust and comprehensive carbon pricing system.

¹⁰ <http://www.pbl.nl/en/publications/enhanced-policy-scenarios-for-major-emitting-countries>.

Focusing negotiations on a world carbon price in addition to quantitative reductions of emissions can alleviate all four problems: first, it can strengthen the Paris accord by providing economic incentives so that countries take charge of their climate commitments rather than engage in carbon freeriding; second, it can serve as a tool for adjusting climate commitments and hence gradually increasing the level of ambition of Nation-States so that the gap between commitments and science-based requirements can be progressively closed; note that such a tool can also enhance the efficiency of the agreement by controlling carbon flows; third, it can provide a credible instrumental basis for climate commitments; and last but not least, it can provide the source of the \$100 billion pledged by developed countries to fight climate change globally.

2. Building the carbon convergence

Governments and businesses are unlikely to realize their climate change goals if they have no definite assurance that their competitors will play by the same rules. To address this stalemate, we need an international agreement that gives them that assurance, one that changes the rules of the game so that they apply to every player. We need to create a system whereby every decision maker, public or private, is responsible for taking into account the true cost of global warming, and is secure in the knowledge that the competitors are doing the same.

This explains why more and more experts – including every author of the Symposium on *'International Climate Negotiations'*¹¹ – agree that putting a price on carbon is essential to the success of any serious, comprehensive climate plan. The [International Monetary Fund now recommends it](#).¹² As does the [OECD](#).¹³ [The World Bank](#)¹⁴ convinced 73 countries, 22 subnational jurisdictions and over 1,000 companies and investors to declare their support for a price on carbon. [The Global Commission on the Economy and Climate](#)¹⁵ has also pointed out that a carbon price may be beneficial for the economy.

There are opportunities to explore linkages between carbon pricing and the [new international climate change agreement](#)¹⁶ to be reached in Paris. But the main challenge facing us is how to

¹¹ See <http://carbon-price.com/>

¹² <http://www.imf.org/external/pubs/ft/survey/so/2014/POL073114A.htm> .

¹³ <https://community.oecd.org/servlet/JiveServlet/previewBody/40641-102-1-76036/OECD> .

¹⁴ <http://www.worldbank.org/content/dam/Worldbank/document/Carbon-Pricing-Statement-060314.pdf>

¹⁵ <http://static.newclimateeconomy.report/TheNewClimateEconomyReport.pdf> .

¹⁶ <http://www.theenergycollective.com/robertstavins/1199961/un-climate-summit-and-key-issue-2015-paris-agreement> .

evolve from a hodge-podge of local or national carbon prices to a global, harmonized carbon pricing system. [IPCC recommends](#)¹⁷ a solution: adopting a "single global carbon price." The price should be high enough to create the necessary incentives to limit global warming to about two degrees Celsius. [The International Energy Agency \(IEA\)](#)¹⁸ recommends that the price of a tonne of CO2 be gradually raised by 2040, to \$140 for developed countries and \$125 for China, Russia, Brazil and South Africa (in US 2013 dollars). According to the [IEA](#),¹⁹ this can be done without harming economic growth.

It is impossible to reach a global carbon price of \$125 or \$140 per tonne of CO2 without first having negotiated an international agreement that can assure all economic agents that their competitors will play by the same climate rules. Indeed, carbon pricing will not reach the desired level as long as individual countries fear that carbon price setting within their respective jurisdictions will scare away businesses and investments send them off to countries where carbon dioxide emissions are cheaper or free of charge. The idea is to refocus these international efforts on negotiating a global, harmonized carbon price signal.

All countries would pledge to introduce, in their respective jurisdictions, a gradually evolving carbon price based on a scientifically validated international standard, in order for the world to keep global warming as close as possible to two degrees Celsius over pre-industrial levels. Countries may levy this price through carbon taxes or emission quotas. Governments would be free to invest, as they see fit, any revenues accruing from carbon emission levies and the corresponding – and necessary – gradual elimination of fossil energy subsidies.

In keeping with the principle of "Common But Differentiated Responsibility", developed countries would be required to set aside part of their carbon pricing revenues to help developing countries introduce policies to lower their emissions, adapt to climate change impacts and create carbon sinks (through reforestation, for example). This requirement would help fund the yet unsourced \$100 billion annual injection into the Green Climate Fund that was promised to developing countries for 2020 to help them deal with climate change. That amount could even be increased. We propose that the contributions of individual developed countries be set according to the proportion of total developed country emissions that their respective GHG emissions represent. The lower a country's emission level, the lower its share of the financial effort. This would serve as a further incentive for emission reductions. Other formulas are also conceivable, such as making the contributions proportional to emissions in excess of the global average per-capita rate, but the argument will likely be made that the most advanced

¹⁷ http://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_summary-for-policymakers.pdf.

¹⁸ http://www.iea.org/publications/freepublications/publication/WEO_2014_ES_English_WEB.pdf.

¹⁹ http://www.iea.org/publications/freepublications/publication/WEO_2014_ES_English_WEB.pdf.

economies, – those that have the best technological capacities – should be the ones helping the others.

This international carbon pricing agreement would allow countries to levy border taxes on products from countries that have not established a carbon price signal in accordance with the international standard. That would be a solution of last resort, to be applied after the usual warnings have been issued. In this manner, it will be in each country's interest to comply with the international agreement, levy a carbon price on its own emissions and use the resulting revenue as it sees fit.

Conclusion: from climate science to climate justice

Climate negotiations are not only a technical discussion based on scientific data but also a political dialogue ultimately based on ethical criteria.

The fight against climate change must not be only presented as an opportunity for economic development but also as a lever to reduce inequalities in human development between countries and within countries. The case of China shows how the constraint of reducing CO2 emissions can be a way to limit coal consumption and limit damage on the health of Chinese, very unevenly distributed within the Chinese population. The same applies to the limitation of car traffic in France, which represents both a health gain and reduction of CO2 emissions. This double climate-health dividend must be at the heart of state contributions to the reduction of global CO2 emissions. Climate justice highlights the equality potential of the fight against climate change at the national and international level. This is why we need the Paris Conference to be informed by both sets of criteria: climate science and climate justice must be combined in a single plan. That is precisely why our proposition brings together the logic of science-based efficiency and the logic of ethics-based justice:

1. Science-based efficiency: a carbon budget set to the two-degree limit leads to the establishment of a differentiated trajectory of gradually converging global pricing of carbon, each country freely determining the mix of instruments used to raise its price;
2. Ethics-based Justice: our carbon price system addresses inequalities between countries (through modulations and compensations) and inequalities within countries (accelerating adaptation of financing).

An international carbon price agreement would provide the world with an excellent instrument for sustainable development. After decades of international stalemate, carbon emitters would have to acknowledge the obvious social and environmental cost of pollution. Consumers and manufacturers would have an incentive to choose lower-carbon-content goods and services and to invest in new energy-saving and emission-reducing technologies. Governments and legislators would have the tool to achieve the scientific climate targets that they have endorsed.

This plan is necessary – more so than ever – to protect humankind from the threat of a three-degree Celsius – or more – global warming. Current initiatives are not without merit but they are insufficient. Our world leaders must champion what a comprehensive and effective climate/energy policy needs: a worldwide, harmonized carbon price.