

FLORENCE SCHOOL OF REGULATION

*Forum on Global Climate Strategies Beyond 2012:
The Route Ahead
Looking for a consensus framework*

**Ignacio Pérez-Arriaga, Pedro Linares, Carlos Batlle and
Julián Barquín**

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FORUM ON GLOBAL CLIMATE STRATEGIES BEYOND 2012: THE ROUTE AHEAD

MADRID, SPAIN, APRIL 11TH TO 13TH, 2007

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Forum on Global Climate Strategies Beyond 2012: The Route Ahead Looking for a consensus framework

Ignacio Pérez-Arriaga, Pedro Linares, Carlos Batlle, Julián Barquín¹

Foreword

Under the auspices of the European Commission, the Council of European Energy Regulators and the Spanish Ministry of Environment, the Florence School of Regulation at the European University Institute (Florence, Italy) with the cooperation of the Institute for Technological research of Comillas University (Madrid, Spain), organized in Madrid a high-level meeting to identify the most promising global climate change strategies beyond 2012.

This Forum was an independent initiative with the distinctive feature of bringing together -by invitation only- about one hundred people who have major roles in shaping future global climate strategies. They were selected based on their recognized conceptual contributions to this topic, their significant influence in the decision making process, and/or their prominent position as leaders of major energy companies, industry, financial institutions or non-governmental organizations. The meeting has facilitated an informal exchange of views among key influential people on the future climate change regime and the possible ways to move forward.

The most valuable outcome of the Forum is the knowledge and the insights into the diverse viewpoints that each participant could obtain from the meeting itself. This summary report offers the interpretation, by the organizers of this event, of the rich material and the diversity of opinions that were presented and debated during the Forum². No actual conclusions are given, since the Forum was not meant to reach any formal conclusions. Moreover, no evident consensus was reached on some essential topics, once more showing the difficulty of reaching broad agreements concerning the future climate change regime. Therefore, the Forum organizers have summarized the dominant opinions on the most relevant issues, as well as the most representative dissenting opinions. Interested readers may also access the original PowerPoint presentations and some background and accompanying documents that were handed by the Forum participants at <http://www.iit.upcomillas.es/gcs2012/>.

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² There was a previous one-day Academic Workshop, whose summary was presented during the first session of the Forum. The complete program of the event is provided in an appendix of this document, as well as the list of participants and the sponsoring entities. See <http://www.iit.upcomillas.es/gcs2012/> for further details.

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1. Background

The scientific knowledge on climate change has firmed up considerably. This has been made broadly known by the publication of the initial documents of the Fourth Assessment Report on global warming by the International Panel on Climate Change (IPCC): “Warming of the climate system is unequivocal... There is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities... Most of the observed increase in globally averaged temperatures since the mid-20th century is very likely³ due to the observed increase in anthropogenic greenhouse gas concentrations”⁴.

The ample body of available scientific evidence now clearly indicates that climate change is serious and urgent. There is a generalized consensus from major academic, professional and political institutions about the importance of the climate change threat. This is more than enough to urge policy makers to put together a response that measures up to the challenge.

A diversity of schemes and strategies to address climate change have been already identified and debated in public forums, so the challenges of a plausible long-term strategy, as well as the viewpoints of all countries, are now mostly explicit and known.

Climate change can only be effectively tackled through broad participation in the global reduction effort by all present and future major emitters. Resolved political will is needed to make real progress in reducing greenhouse gas emissions. There is a growing sense of urgency for stronger actions to curb the primary causes and to prepare for the consequences of global warming. The principal challenge for the future climate regime is to identify the nature and level of commitment that will provide sufficient incentives for all Parties, especially the largest emitters, to join a global agreement and achieve sufficient reductions in greenhouse gas (GHG) emissions to comply with art. 2 of the UN Framework Convention on Climate Change: “To stabilize GHG concentrations at a level that would prevent dangerous anthropogenic interference with the climate system... allow ecosystems to adapt... [in which] food production is not threatened... enable economic development...”

Dialogue among the key international partners to explore global climate strategies is already being conducted in various international forums: formally under the UNFCCC, but also within the G8 and other multilateral and bilateral meetings. Identification, analysis and proposals of alternatives are also being put forth in high-quality workshops run by universities and NGOs, with support by industrial or financial institutions. The Madrid Forum has adopted as its starting point the valuable knowledge that already has been produced in some of these previous meetings and related publications⁵.

³ This means “more than 90% probability”, according to the adopted terminology by the IPCC.

⁴ IPCC, “Climate Change 2007: The Physical Science Basis. Summary for Policymakers”, Working Group I, IPCC, February 2007.

⁵ See <http://www.iit.upcomillas.es/gcs2012/> for some of these documents.

As explained in the Foreword, this document condenses and communicates the Forum organizers' interpretation of the prevailing opinions that were presented and debated during the Forum on the major issues under discussion. The organization of the document tries to reproduce the main lines of discussion and not exactly the structure of the program, since most relevant topics were addressed in more than one session. Section 2 looks at the broader issues of setting the appropriate framework for the future climate regime, while section 3 more specifically addresses the diverse policy instruments that may be used. Section 4 examines the role to be played by the different stakeholders, private firms and NGOs in particular. Finally, section 5 offers some guidelines for future formal negotiations.

2. The framework for a global agreement

- (i) The most contentious issues when trying to design the future global climate regime are: the choice between top-down or bottom-up approaches; whether or not to build on the Kyoto Protocol; the institutional framework for discussion and decision-making; the need for targets; and the roles to be played by developing and developed countries.

2.1 Top-down and bottom-up approaches

- (ii) Although top-down are usually confronted with bottom-up approaches as alternative ways of achieving an agreement, it seems preferable that they should be combined.
- (iii) A top-down agreement is still required, and still attainable. It is required because countries need a common long-term aim, both for policy and market reasons. And it is still attainable because, notwithstanding the many difficulties which Kyoto has met when trying to distribute mitigation efforts among countries, there are grounds for an agreement on other issues: for example, energy efficiency promotion policies can more easily be accepted as a basic component of the future climate regime. Adaptation will draw developing countries to search for common schemes. And finally, the fact is that nobody wants to stay out of a global agreement: as was pointed out in the keynote speech of the Forum by the Nobel Laureate Professor Thomas Schelling, there have been instances in recent history, such as the Marshall Plan or the creation of NATO, when very significant agreements were signed based on name calling, public shaming or just fear, and in spite of the lack of a feasible economic consensus.
- (iv) However, the quest for a top-down approach should not preclude the development of bottom-up fragmented markets or other schemes. A climate agreement should provide a common framework, but unity of action does not necessarily imply unanimity. The future climate regime should be flexible enough to accommodate diverse national and regional circumstances. The post-2012 regime will probably be more differentiated and decentralized than hitherto. The next round of mitigation efforts may have to be dealt with by these types of agreements.

- (v) Bottom-up approaches present both advantages and shortcomings. Among the advantages: they tolerate variable geometries of participation, they better allow for the incorporation of domestic policies, and they are easier to negotiate. However, decentralized approaches require some degree of coordination in order to be fair and effective, since they imply more avenues for participation. Although the issue of competitiveness could have been overplayed, there is still a need to ensure a minimum integrity and fairness of the contributions to such a fragmented regime. The key issues here are comparability of efforts and comparability of methods and measurements; a common standard which may run across the different agreements; and transparency, monitoring and accountability of what is being done.
- (vi) Therefore, the future climate agreement will probably require a more complex structure. It may feature diverse components (discussed below) under different approaches, but with a common coordination. It will be necessary to focus more on the linkages between components, rather than on the contents, which will be determined possibly by decentralized approaches.

2.2 The need for targets

- (vii) The question is whether or not to have targets associated with a global climate regime. Targets provide good benchmarks for measuring progress and success. Targets help us estimate whether the entire process is moving in the right direction or not. Given the need for comparability of efforts and accountability implied in the most plausible agreement framework, targets are a must. “Without vision, people perish”.
- (viii) However, the advantages of targets can be realized even if they are non-binding. So setting a target does not necessarily imply that it has to be enforced, which is known to be strongly contested by many developing countries. Moreover, negotiation of concentration targets in the long term might be divisive and detrimental: the present knowledge about the possible impacts of climate change and their relation to GHG concentration levels, the cost and potential of mitigation measures, and the capacity of different countries to respond still involve considerable uncertainties, thus resulting in either unrealistically tough commitments or in too soft ones.
- (ix) Assuming that binding and non-binding targets might coexist, and given the large differences between countries, an expected scenario might consist of different groups of countries with different long-term mitigation commitments set up jointly or by national governments –perhaps subject to some coordination scheme–, which may later on get linked. This should not prevent that, at least within the developed countries, the commitments be mandatory, and this target-setting could be carried out according to some criterion of comparability of efforts, as previously mentioned.

- (x) One question that immediately arises is: in those cases without binding targets, how are incentives created for carbon mitigation? This question is fully addressed later, but the main point is the need to separate the issue of targets from the issue of implementation of carbon markets. It is one thing to have one commonly agreed target; how this target is met is another. Emission targets can be helpful, but what in the end matters are actions resulting in actual mitigation outcomes, be it with or without targets. Setting commitments is not the only way to pursue mitigation: multi-approach regimes, voluntary agreements, sector-based agreements, funding, technology R&D, etc., also have a role.
- (xi) As for the time horizon for targets, there should be short-, medium- and long-term targets, if possible. On the one hand, targets have to be set for a duration that is commensurate with the infrastructure investment cycles. On the other hand, it is acknowledged that while politicians may find it easier to agree to long-term commitments, these are actually difficult to honor in practice, which often renders them useless. Therefore, a combination of all them will be necessary. Besides, it has to be realized that, from a political and public opinion perspective, there should be a simple global target that clearly indicates if the entire process is being successful or not.

2.3 The role of the Kyoto Protocol

- (xii) The Kyoto Protocol is a significant first step in establishing the future climate regime, and possibly a crucial component of this regime, but it cannot be considered the unique or single approach to meet the required mitigation objectives. Future global climate agreements do not have to be framed necessarily within the Kyoto Protocol format.
- (xiii) Under a climate regime that combines top-down and bottom-up approaches, Kyoto –or some Kyoto-like scheme- should have a role in the post-2012 agreement. The signatories of the Kyoto Protocol already have made commitments in this respect. The next post-2012 agreement probably will not be a simple extension of the Kyoto Protocol, although it will likely include its most salient features. Some of them are presently being tested in the Emission Trading Scheme (ETS) of the European Union.
- (xiv) The Kyoto Protocol has established some valid guidelines that should prove useful for the future global climate regime. These include gradualism; country differentiation; the ability to separate equity and efficiency issues; flexibility for meeting the commitments; the comprehensive treatment of all emission sources and all GHG; and market mechanisms that incorporate the developing countries.
- (xv) The present shortcomings of the Kyoto Protocol are also acknowledged: unrealistically short time horizons that severely limit its potential to promote structural technology changes; difficulties in establishing differentiated commitments for all countries and enforcing their compliance; and the likely insufficiency of the carbon price to bring about technology changes.

- (xvi) The institutional framework of the Kyoto Protocol may have to be reinforced and extended to include other agreements and compliance requirements. This is discussed next.

2.4 The institutional framework

- (xvii) The future climate regime has to be negotiated, agreed and implemented within some institutional framework. There is a need for an effective coordinating agent at the global scale, since this will foster trust from participating governments and the regulatory certainty that investors in clean technologies demand. It is acknowledged that this solid institutional framework does not exist for Kyoto, so it will probably have to be built anew. It has been suggested that its development initially might take place at regional level, via bottom-up approaches, supposedly under the umbrella of the UNFCCC.
- (xviii) Regarding the role of the Kyoto Protocol and the UNFCCC, and given that there may be more than one agreement under the latter, it seems preferable to place the market mechanisms under the UNFCCC rather than keeping them under Kyoto. The UNFCCC, however, may not be the best avenue for financing technology agreements, so more options should be considered.
- (xix) Regarding the differentiated participation of countries according to their characteristics, it has to be recognized that differences, both within Annex I and non-Annex I countries, are becoming more prominent, so it would be convenient to create groups within them.

2.5 The contribution from developing & developed countries

- (xx) Developed countries must lead the process of implementation of the future climate regime. Although many developing countries are already making significant contributions, the historical responsibility, as well as most of the financial and technical capacities, still pertain to developed countries.
- (xxi) Developing countries have to be incorporated into the future global climate regime, and they must play a larger role in it. Significant efforts, in their own way, are also required from these countries. However, this will only be possible if it is made compatible with a better understanding and attention to their needs.
- (xxii) Several indispensable issues, regarding the interaction among developing and developed countries in the process towards a global climate regime, have been identified: the need to integrate or “mainstream” climate change policies –both in mitigation and in adaptation- into sustainable development policies; and, as usual, the bottom line is the need for adequate funding of these efforts. These issues are further developed next.

- (xxiii) Developing countries have the right to pursue and to attain an adequate level of development. Although economic development typically implies an environmental burden and additional GHG emissions, it is also an opportunity to do it in a more sustainable way and to adapt better to the threats of climate change. The challenge is to design actions that exploit any complementarities between development and climate change policies. With the financial and technical support of developed countries, developing countries should follow sustainable development patterns, avoiding the unsustainable models that were typically adopted by developed countries and making use of development to attain a better resilience against climate change impacts.
- (xxiv) Climate change mitigation policies should be integrated into domestic development policies, where security of energy supply and economic competitiveness are the overriding concerns and cannot be ignored. Many developing countries have pressing needs to expand their national energy supply and climate change concerns should not be seen as an impediment to achieve this priority, but as one more objective in a broader strategy that jointly contemplates energy security, economic development, international cooperation and climate change mitigation and also adaptation (see next).
- (xxv) Equally important is the need to mainstream and scale up adaptation and development efforts. Adaptation poses difficult challenges (see section 3.1 below), but it has to be included in an eventual agreement if larger contributions from developing countries are to be expected.
- (xxvi) There are specific disadvantaged groups whose needs also should be incorporated, and that are not usually considered, even within developing countries. The energy poor, which are basically non-polluters, should be helped to finance their transition to a more efficient, also non-polluting, energy pattern. Also, poor farmers in many developing regions will suffer significantly from climate change, and have to be offered alternatives.
- (xxvii) Developed countries should contribute financing to these efforts in mitigation and adaptation in developing countries—an obligation incumbent upon them as leaders. Many Parties have expressed the need to upscale the financial effort, by ensuring additional funds, and to correct the existing imbalance between mitigation and adaptation, also in terms of financing. Financing mitigation efforts and technology transfer is possible within the adequate regulatory frameworks, so the challenge specifically lies in financing the integration of climate policies within sustainable development and the adaptation efforts. A sensitive issue is to avoid the perception that financing climate change activities detracts from the current or even future estimated international cooperation for development financial effort.
- (xxviii) Provided the above-mentioned needs and concerns are taken care of, developing countries should be ready to take part in mitigation efforts. In fact, some developing countries are already willing to discuss voluntary commitments. A new annex in the present Kyoto arrangements would be needed for these countries to meaningfully participate in the process. It is critical and necessary, although difficult, to introduce

differences in the G77, in order to allow those countries that are ready to take voluntary pledges to do so.

- (xxix) These voluntary commitments should probably be based on no-lose, non-binding targets, as previously mentioned. Sectoral agreements may prove helpful, since, if the complete national economy is not ready for targets, parts of the economy may be. The no-lose basis will be an essential feature in these cases. A possible way to express these targets might be as a reduction of GHG emissions growth rates, so that the total growth of the national sector is not limited, but only its intensity.
- (xxx) A system to recognize unilateral actions, even if no commitments are made, would also be recommended, considering the accountability issues that were previously mentioned.

3. The elements for the agreement

- (xxxi) It is recognized that the major policy components to be included in the future global climate regime are: adaptation, market and other regulatory mechanisms, technology, and action to reduce deforestation. They will be discussed below. It is understood that the classical components of any sound mitigation strategy –namely, energy saving and efficiency measures, low carbon technologies for electricity production and transportation and promotion of focused research and development- will be included under the technology component and stimulated by adequate economic incentives, market mechanisms and other convenient regulatory measures. Winning over public opinion is another critical component that will not be discussed here at length.

3.1 Adaptation

- (xxxii) It is generally acknowledged that there has been a wide imbalance between mitigation and adaptation efforts, and that this imbalance should be corrected, especially if developing countries are to be taken on board. For some regions adaptation is not an option but a sheer necessity.
- (xxxiii) Adaptation should then come to the forefront in future climate regime negotiations. Future agreements should give equal weight to adaptation and mitigation. This would also help acknowledge that some developing countries are already making progress in this field.
- (xxxiv) Adaptation remains a major challenge, and whatever resources are necessary to stand up to it should be devoted there. However, financing adaptation is a complex task. Although there is already an Adaptation Fund, it still needs to be operationalized. In addition, more sources for financing adaptation should be considered. There is a need here for innovation, for incentives for private involvement, and for a bold attitude towards finding any possible sources to meet this objective.

3.2 Market mechanisms and other regulatory instruments for mitigation

- (xxxv) All available regulatory instruments for mitigation should be considered: genuine market mechanisms, as well as command and control measures, such as efficiency standards.
- (xxxvi) Conceptually, market mechanisms are very powerful instruments for achieving environmental, energy and development objectives. They should constitute a fundamental pillar for a future climate regime. Whenever possible, they should be normally preferred. This does not mean, however, that all countries should be forced into them, since there are very different conditions even within developed countries. Therefore, they should remain a voluntary option, and what should be ensured is the appropriate transfer of information and experience from those countries who have applied them to those willing to consider them.
- (xxxvii) A global carbon price would help in solving the equity issue regarding the impact of the climate regime on the competitiveness of the different countries. It may be established by some kind of international agreement -which appears to be difficult at the present time, as indicated before- or by linking national or regional emissions trading schemes by mutual recognition or recognition of CDM, JI or other kinds of offset projects.
- (xxxviii) Market mechanisms, however, despite their usefulness in achieving efficient allocation of resources and linking diverse systems via trading, may be insufficient to promote necessary structural changes in technology and in the consumers' patterns of behavior. This is why they will have to be supplemented, at least for the time being, with additional regulatory instruments.

3.2.1 Carbon markets

- (xxxix) Carbon markets have shown to be a very important driver for carbon mitigation. They are very flexible, and set a target per firm without a large bureaucratic complexity. While limited, experience so far shows that carbon prices result in a welcome cultural change regarding carbon emissions. They are also able to separate equity and efficiency issues, and they are consistent with the established trade in assets.
- (xl) The European Emissions Trading Scheme (ETS), in spite of some shortcomings, has generated valuable experience for the future development of other carbon markets, and has set a quiet example for the US and others.
- (xli) Despite the long-term desirability of a broad market, it should not be expected that all countries –even the developed ones- will implement carbon markets in the short or medium term. Initially some may adopt other approaches to mitigation that the countries may judge to be more compatible with their current national energy policies. This should be acceptable, as long as each country chooses a comparable level of commitment under its alternative format.

3.2.2 Clean Development Mechanism

- (xlii) The CDM has helped to build institutional and technological capacities in developing countries. This aspect of the CDM is often more important for developing countries than the economic consequences.
- (xliii) On the other hand, the current format of the CDM should be thoroughly reconsidered, streamlined and scaled up. It has been argued that the complexity of the current CDM process could reduce its potential contribution significantly. The initial design of the CDM -within the context of a low ambition Kyoto agreement- must become bolder in the context of a potential new climate regime beyond 2012. Design modifications of the CDM must address three major issues:
- Greater contribution to sustainable development has to be included as an explicit item in the evaluation of the CDM projects.
 - The revised format of the CDM must encourage and / or facilitate its application to large projects--or large combinations of small ones--such as action programs that affect many installations. Programmatic CDM and development banking seem to be promising alternatives.
 - The scope of the CDM must be extended to larger geographical areas and to new technologies. An explicit promotional effort should be made to kick-start the CDM in Africa, since it has barely commenced there.

Besides expanding the CDM, it might be possible to establish additional instruments, such as a new facility to finance emissions reductions programs for developing countries directly, without any resort to emission allowances.

- (xliv) The CDM cannot be expanded in space, scope and volume without a sufficient demand for CDM credits. But so far Europe has been the only demanding agent. The much needed quantum leap in the CDM market will only be possible with additional demand from a larger group of developed countries. The incoming opening of the first period of the Kyoto Protocol should help, but without the presence of the US it may not be sufficient. The US, with whatever internal approach to climate change it may have, seems reluctant to transfer money for emissions reductions to foreign countries that are difficult to control and with political regimes that may be considered to be questionable.

3.2.3 Taxes

- (xlv) Many economists have proposed taxes as the best instrument for mitigating carbon emissions, but the fact is that they face great difficulties in practice, since they easily find political opposition. This is clearly the case in the European Union, where unanimity is required to pass any legislation on carbon or energy taxes. It may be, however, that taxes are more attractive in other parts of the world and it is important to keep all options available in post-Kyoto planning.

- (xlvi) Like carbon markets, a carbon tax reform may be designed to separate equity and efficiency issues. In an international framework emphasizing flexible approaches to reducing carbon emissions, carbon taxes can co-exist with carbon market systems so long as countries choose a comparable level of commitment under the alternative formats to harmonize carbon prices and taxes across countries.
- (xlvii) Less direct forms of energy or carbon taxation, such as road tolls or higher taxes for less efficient vehicles, may be a good option for mitigating emissions. However, agreement across transport, finance and environment ministerial departments is typically difficult to achieve.

3.3 Technology policies

- (xlviii) In spite of the attractiveness of market mechanisms for mitigating GHG emissions, it has to be acknowledged that they will not achieve much in terms of emission reductions and structural technology changes unless the prescribed emission targets are sufficiently stringent and apply to a significant number of relevant countries. Consequently, for the time being, additional ad hoc policies will be needed for low carbon technology development.
- (xlix) In general these ad hoc policies will depend on the specific country and typically will have to be integrated with national energy policies. It is essential for the long-term climate regime to devote more efforts now to well focused R&D and innovation. But it is also critical to immediately place the emphasis on massive deployment of existing clean technologies, as the only means to achieve meaningful results in emission reduction.
- (l) Technology policies should generally avoid choosing winners in advance, and should leave the different technologies compete, since their potential strengths and weaknesses cannot be fully known *a priori*. On the other hand, it is also acknowledged that today energy savings and efficiency is a win-win strategy, which must be vigorously pursued in any case. Carbon sequestration and storage also seem to be promising technologies, *vis à vis* the forecasted increase of coal use in Eastern Asia.

3.4 Action to reduce deforestation

- (li) Deforestation is a very relevant issue for developing countries, and its avoidance is a main contributor for mitigating carbon emissions. It should be placed higher in the climate regime agenda.
- (lii) Presently there are not enough incentives for avoiding deforestation, especially in developing countries, as shown by the high deforestation rate. Moreover, some of the current energy policies that have been conceived by developed countries to mitigate emissions (such as the use of biofuels) are causing more deforestation, as forests are being cleared to leave room for the new energy crops.

- (liii) Clear incentives and targets should therefore be established, and deforestation should be incorporated as a major component of the future climate regime. It could be that deforestation will be the grease that lubricates the next global agreement.

4. The role of private entities and NGOs

- (liv) Until very recently, private entities and NGOs have been operating mostly outside the core of climate agreements, as contributors to the debate, but not as key players. In fact, some of them have been obstructing progress towards a more advanced climate policy. Both aspects are rapidly changing.
- (lv) Companies across the world are beginning to adopt a more proactive role in the definition of future climate policies. Even in the US, the Climate Action Partnership, or the “Big 3” automakers asking for a carbon trading regime, are a clear indication of the new situation.
- (lvi) It is increasingly recognized that industrial companies and financial entities –to a greater extent than governments- must be the main driving forces of the structural change towards a low carbon economy. Several reasons can be given for this:
- The private sector is essential to provide the large volume of investment in clean technologies that will be needed in the short, medium and long terms, with the financial entities making available the required funds as well as the instruments for hedging risk. The same applies to the large required adaptation efforts.
 - Companies can use their valuable know-how and their material and human resources to develop and deploy on a large scale the mitigation and adaptation measures that are needed to fight climate change.
 - Private companies have traditionally been the main drivers for innovation, which is a critical component of any long-term climate change strategy.
 - Most industrial companies now acknowledge that they are part of the problem, and therefore admit their role in the solution.
- (lvii) It is therefore essential that the future climate regime provides a favourable context and clear incentives for companies to participate. Strong signals (such as political commitments and targets) are needed to drive investment and technology in the desired directions. Coming up with adequate incentives will be a key issue in the design of the future climate regime, which should phase out inefficient technologies and reward environmentally conscious managers. This is what industry needs and does not need:
- Industry needs governments to establish a stable regulatory and institutional framework that allows profitable investments to occur, on a global scale. Since very large new investments have to be mobilized, long term regulatory stability is a must, as well as clarity of purpose and objectives. This does not necessarily

mean legally binding targets or constraints, but clarity of direction, commensurate to the scale of the challenge, to engage business in a response of the required volume. Industry needs credible governance for the implementation of long-term goals and detachment from the short-term policy, which can be reversed with a change of government. On a global scale the future climate regime has to provide a level playing field, where inconsistencies between different legislations and sectors are minimized.

- Industry does not need certainty in carbon prices, since companies are used to managing risks. It also does not need intergovernmental bodies handling most kinds of technology transfer, climate policies divorced from energy and transport policies, or even financial support for potentially profitable activities, since there is abundant low-cost capital available, waiting for sound investment opportunities. As competitive products become available, they will be distributed worldwide. This should not be a major concern in policy design.

5. Some guidelines for future formal negotiations

- (lviii) A more pragmatic and positive attitude is needed for the post-2012 formal negotiations. Obviously, this is more easily achieved at informal gatherings, such as in this Madrid Forum, where the direction for progress in future global agreements and the actual obstacles are more easily identified than they are in formal meetings where negotiators are mostly guided by rigid instructions from their governments and old rhetoric prevails. The question is how to transfer the constructive atmosphere of these informal dialogues to formal negotiations. Some hints follow.
- (lix) Although it is acknowledged that there is a proliferation of climate-change-related conferences and workshops, nevertheless it will be convenient to provide opportunities for key influential people from national administrations, international organizations, think tanks, academia, industry and the financial world to meet and openly discuss, in an informal but intellectually stimulating setting, the most suitable approaches to the future global climate regime. Hopefully, the insights obtained during the informal meeting will be somehow translated into the formal negotiation process.
- (lx) Successful negotiations depend on understanding the other Parties' interests. A successful agreement will only be possible if it represents the interests of all Parties. This requires mutual knowledge and respect, and the willingness to abandon the idea of imposing any one specific approach, even if it appears to be superior to all others.
- (lxi) Accounting for the interests of all Parties also requires the need to acknowledge the fact that energy security, energy dependence and economic development issues are conditioning the evolution of the climate agreements as much as the adaptation and mitigation aspects. Therefore, as already mentioned, all these concerns have to be integrated in the future climate regime.

- (lxii) In the end what matters are actual emission reductions and permanent structural changes towards a low carbon economy, rather than plans and targets (whose importance in guiding the overall effort is also recognized). The actual efforts that many countries –both developed and developing- have made in implementing sound mitigation and adaptation measures are quite remarkable, even in the absence of a formal international recognition. It is important that these efforts are known, acknowledged and somehow incorporated in the future agreements to be built.
- (lxiii) Winning the attention of public opinion is of the utmost importance. Public pressure to obtain a positive outcome from the climate negotiations will contribute to create a more constructive attitude and to soften some inflexibilities.
- (lxiv) The complexity of creating a global climate regime has been clearly identified. It will probably consist of a range of diverse agreements, with multiple linkages that fall under some form of common coordination and guidance. This may require more art and less science. As one of the participants aptly characterized it, it is better conceived of as a loose tapestry to be woven than as a monolithic architecture to be built. It is possible. The knowledge, the technology, and the human and financial resources are all available. Now we must find the flexibility, the vision and the political courage to formulate and to agree on a workable future global climate regime. That is, it is the time of politics. Although this attitude somehow represents a departure from the most commonly proposed approaches, the Forum agreed that this is an achievable task, and therefore its final message was one of optimism.

Annex A Program of the Forum and the Academic Workshop

FORUM ON GLOBAL CLIMATE STRATEGIES BEYOND 2012: THE ROUTE AHEAD

MADRID, SPAIN, APRIL 11TH TO 13TH, 2007

There were three main sessions in the first full day of the Forum on Thursday April 12th, which separately addressed the central topics: the role that developed countries could play, the role that developing countries could play, and the viewpoint of the major stakeholders: industry, financial institutions and the civil society. This was followed in the morning of the second day by a personal inventory, made by appointed participants, of the main ideas that were proposed in the preceding day, together with their own opinions, and then a general discussion where all viewpoints were jointly considered.

On Wednesday April 11th, prior to the main conference, as indicated in the agenda, there was a one-day academic workshop, mostly for NGOs, academics and representatives of think tanks, but open to all Forum participants who wished to attend. The purpose of this workshop was to review and to present and discuss any new findings and ideas that could be useful during the debates of the Forum, but in a more academic environment. At the beginning of the Forum there was an introductory session where the major findings and conclusions of the academic workshop were briefly presented.

The participants in the Forum took part in their personal capacities, not necessarily reflecting the policies and positions of their respective institutions. The participants and the Florence School of Regulation are free to use the information received in the Forum, but neither the identity nor the affiliation of the source of such information can be revealed.

The Forum was organized by the *Florence School of Regulation*, under the auspices of the *European Commission*, the *Council of European Energy Regulators* and also of the *Spanish Ministry of Environment*. Coordination of the Forum and special technical support was provided by the *Institute for Technological Research (IIT) of Comillas University* in Madrid with the collaboration of the *Spanish Energy Club*.

The venue was Madrid, on April 11-13, 2007. All technical sessions took place at the Headquarters of the Spanish Energy Regulatory Commission, 47 Alcalá Street, Madrid.

The Director of the Forum is Prof. Ignacio Pérez-Arriaga, Institute for Technological Research, Comillas University, Madrid, and Director of Training at the *Florence School of Regulation*. E-mail: <Ignacio@iit.upcomillas.es>, Tel.: +34 91 540 6157.

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ACADEMIC WORKSHOP:

LOOKING FOR A CONSENSUS FRAMEWORK IN CLIMATE POLICY

Wednesday 11, April 2007 (8:30 to 18:00)

The objective of this workshop is to identify the best options for a potentially valid institutional framework and the elements of an adequate international climate policy agreement, which may help advance towards an adequate climate policy regime.

The workshop concentrated on the identification and analysis of the major building blocks of a potentially successful future climate regime. And on how to engage all potentially major Parties in this regime.

A synthesis of the outcome of this academic workshop was presented in Session 1 of the Forum on Thursday morning by the chairs of each session.

8:30 to 9:00. Registration

9:00 to 9:15. Welcome

Pippo Ranci, Professor, Catholic University of Milan, Director of the Florence School of Regulation.

Ignacio Pérez-Arriaga, Professor, Institute for Technological Research, Comillas University. Director of Training, Florence School of Regulation.

PART A. SETTING AN APPROPRIATE FRAMEWORK FOR AGREEMENT

9:15 to 10:45. Session A1. Global strategy and the institutional framework

Chair (15 minutes): Carlo Carraro.

Speakers (20' each): Thomas Heller & Ambuj Sagar.

Topics for discussion:

- Which are the weak & strong points of the most promising strategies to build a successful future climate regime (Kyoto-like with “cap first”; “empower technology first”, i.e. initial emphasis in clean technology development; economic incentives via “carbon taxes”; other)?
- What should be the appropriate scope (global, regional, national or sectoral) for an agreement under each strategy? Can they be made compatible? Which one(s) should prevail?
- If a global implementation scheme is preferred,
 - Should Kyoto be used as a basis? Which are the valuable elements to be salvaged?

- How to combine schemes that are mostly based on technology with a Kyoto-like framework?
- How to enforce agreements, or prevent countries from withdrawing? How to engage both the industrial and the developing countries?
- Is the UNFCCC the most adequate arena for consensus building? Are there any worthy alternatives?
- If regional/sectoral/national implementation schemes are preferred,
 - How to coordinate them?
 - How to prevent leakage, free-riding or other distortions in competition in the absence of a truly global scheme?
 - How to ensure that the total effort is sufficient and equitably allocated?
- What should be the appropriate time scope? If long-term, how to bind future governments?

10:45 to 11:15. Coffee break.

11:15 to 12: 45. Session A2. The definition of common objectives

Chair (15 minutes): Taishi Sugiyama.

Speakers (20' each): Frank Convery & Bert Metz.

Topics for discussion:

- Is it possible or desirable to set common objectives? Which ones?
 - Emission &/or concentration targets: Concentration levels? Final emissions? Intensity targets? Reductions compared to BAU? Compared to a base year?
 - Technology &/or R&D objectives. Options. International cooperation initiatives in technology development.
 - Temperature limits.
 - Other targets.
- How to set targets? Should cost-benefit analysis be used, or rather policy considerations?
- Should targets be binding? Or conditional on other issues?
- How to assign targets?
 - How to measure fairness?
 - Should formulas or indexes be used?

12:45 to 14:00. Lunch

PART B. DEFINING THE ARCHITECTURE FOR AGREEMENT

14:00 to 15:30. Session B1. Which relevant policy elements should be included in a potentially successful future climate regime and how to address them?

Chair (15 minutes): Christian Egenhofer.

Speakers (20' each): Gilbert Metcalf and Joseph Aldy.

Topics for discussion:

- What should be the role of each one of the following elements in any future climate regime and how could they be combined?
 - PAMs
 - Flexible Mechanisms
 - Adaptation
 - Incentives
 - Technology Transfer
 - Sustainable development
 - Compliance regime

15:30 to 16:00. Coffee break.

16:00 to 17:30. Session B2. The role of the different stakeholders (industrial companies, financial institutions, non-governmental organizations)

Chair (15 minutes): Charles Kolstad.

Speakers (20' each): Osvaldo Girardín & Michael Grubb.

Topics for discussion:

- What should be the role of the different stakeholders and how to facilitate their participation?
- How to motivate the required investments? Are current price signals strong enough for technology changes? How to provide certainty to investors from the private sector? How to create financial interests to sustain climate policy?
- Which should be the role of private firms in R&D?
- How to advance in energy conservation? How to achieve it with private firms?
- Is competitiveness of the companies really being affected? What are the real risks of relocation or leakage? Potential compensation measures and their implementation.
- How to promote public awareness and willingness to pay?

FORUM

GLOBAL CLIMATE STRATEGIES BEYOND 2012: THE ROUTE AHEAD

WEDNESDAY 11, APRIL 2007

WELCOME RECEPTION AT THE *HOTEL INTERCONTINENTAL*

20:00. MUSIC CONCERT BY THE *ESCUELA SUPERIOR DE MÚSICA REINA SOFÍA*

21:00. COCKTAIL & DINNER AT THE *HOTEL INTERCONTINENTAL*

THURSDAY 12, APRIL 2007

8:15 to 8:45. Registration

8:45 to 9:30. Inauguration and welcome

María Teresa Costa, President of the Spanish Energy Regulatory Commission.

Cristina Narbona, Spanish Minister for Environment.

Thomas Schelling, 2005 Nobel Prize Laureate in Economics.

9:30 to 10:30. Session 1: Summary of the academic session (*four 15 minute presentations*).

Chair and speaker: Christian Egenhofer, Center for European Policy Studies.

Carlo Carraro, University of Venice.

Taishi Sugiyama, Central Research Institute of Electric Power Industry.

Charles Kolstad, University of California, Santa Barbara.

10:30 to 11:00. Coffee break

11:00 to 13:00. Session 2: The role of developed countries in designing the post 2012 regime: Potential common strategies on further commitments (*three 15 minute presentations followed by discussion*).

From the perspective of developed countries, this session seeks to identify and evaluate potential further actions that could serve as building blocks of the future climate regime, taking into account the leading position of these countries in tackling climate change and accepting from the outset the diversity of their initial conditions and priorities.

In this regard, presentations should try to shed light on the type, level and share of commitments, keeping in mind that equitable efforts need to be assured and actions should be possible and affordable politically and economically. Alternatives to enhance the implementation of deeper GHG emissions reduction and the options to integrate the potential different schemes should be analyzed.

The proposed approaches should promote the broadest possible participation in addressing climate change and should also ensure a comprehensive, realistic and timely approach to defining the future climate regime.

Chair: Harald Dovland, Ministry of Environment, Norway.

Jos Delbeke, Director for Air and Chemicals, European Commission.

Edward Helme, President of the Center for Clean Air Policy, USA.

Vladimir Maximov, Ministry of Economic Development and Trade of the Russian Federation.

13:00 to 14:00. Buffet lunch

14:00 to 16:00. Session 3: The role of developing countries in designing the post 2012 regime: Potential common strategies on long-term cooperation action to address climate change (*three 15 minute presentations followed by discussion*).

From the perspective of developing countries, this session seeks to identify and evaluate potential further actions to address climate change that are suitable as building blocks for a future climate regime, while taking into account national circumstances and development needs. These potential actions must take into consideration the widely accepted principle of common but differentiated responsibilities, and also the diversity of initial conditions and priorities of the countries belonging to this group. The presentations should try to shed light on the different interests of developing countries, the range of contributions to the future climate change regime, the incentives to take action and the co benefits to be achieved.

Key issues to be addressed should take into consideration: mainstreaming climate change response action and assistance into development policy; financing through broadened versions of the flexibility mechanisms; new formulas to facilitate the transition to a low carbon economy; removal of policy and regulation barriers to facilitate and achieve a strong penetration of technologies for renewable generation and energy saving and efficiency; identification and financing of adaptation policies to minimize the negative impacts of climate change; and definition of the most suitable national instruments to be adopted under different circumstances.

Chair: Mohan Munasinghe, Vice Chairman, Intergovernmental Panel on Climate Change.

Fernando Tudela, Ministry for Environment & Natural Resources, Mexico.

Sanjay Vashist, The Energy and Resources Institute, India.

Liu Qiang, Energy Research Institute of National Development, China.

16:30 to 18:30. Panel session 4: The role of other major stakeholders in the post 2012 regime: Industry, financial institutions and NGOs (*10 minute presentations followed by discussion*)

Key issues and major questions to be addressed should take into consideration: the vision of the individual stakeholders on an adequate future climate regime that will allow their organizations to contribute efficiently to mitigation and adaptation to climate change; the role that each company or institution could play and how this participation could be facilitated; how to provide certainty and economic incentives to motivate the required investments in clean technologies and to achieve the technology changes that are needed; how to create financial interests to sustain climate policy and how to link them to development assistance; how to promote public awareness and involvement.

Chair: Ignacio Pérez-Arriaga, Comillas University and Florence School of Regulation.

Joelle Chassard, Chief Carbon Unit, World Bank.

Fernando Conte, Chairman of the Association of European Airlines (AEA) and CEO of Iberia.

Andrei Marcu, President and CEO, IETA.

Aurelio Martínez, President of the Instituto de Crédito Oficial (ICO).

Rafael Miranda, President of Eurelectric and CEO of ENDESA.

Teruyuki Nakazawa, Executive Technical Adviser, Mitsubishi Corporation.

Jim Suciú, President, Global Sales & Marketing, GE Energy.

Hans Verolme, Director, Climate Change Program, WWF.

John Wells, Vicepresident for Environment, BP.

20:00. GUIDED PRIVATE VISIT TO [EL PRADO](#) PAINTING MUSEUM

21:30 TO 23:00: COCKTAIL & DINNER AT THE [RITZ HOTEL](#)

FRIDAY 13, APRIL 2007

8:30 to 9:00. Registration and coffee.

9:00 to 12:30 (with coffee break: 10:45 to 11:15). Session 5: Identification and analysis of major issues and contributions in the Forum. The route ahead for a truly global climate regime *(15 minute presentations followed by discussion)*.

Based on the contributions in the four sessions of the first day of the Forum and on their own opinions, the speakers will present their views on the way ahead to develop a global climate strategy beyond 2012. All participants in the Forum are also invited to express their comments on these views with the aim of building some sort of consensus on the dominant approach(es) and the associated policy implications.

Moderator: Michael Zammit Cutajar, Ambassador for Climate Change, Malta.

Christiana Figueres, Executive Director, Center for Sustainable Development in the Americas, Costa Rica.

Mario Sebares, Managing Director, Santander Investment.

Nicole Wilke, German Federal Ministry for the Environment.

Denny Ellerman, Senior Lecturer, MIT, USA.

Mohan Munasinghe, Vice Chairman, Intergovernmental Panel on Climate Change.

12.30 to 12:45. Recess.

12.45 to 13:30. Closure.

Halldor Thorgeirsson, Director, Sustainable Development Mechanisms, UNFCCC.

Humberto Rosa, Portuguese Secretary of State for Environment.

Ligia Castro, General Administrator, National Environmental Authority of Panama.

Arturo Gonzalo Aizpiri, Spanish Secretary General for Contamination and Climate Change Prevention.

13:30. Buffet lunch

Annex B List of participants

FORUM ON GLOBAL CLIMATE STRATEGIES BEYOND 2012: THE ROUTE AHEAD

MADRID, SPAIN, APRIL 11TH TO 13TH, 2007

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Annex C Sponsoring entities

The Forum has been made possible by the generosity of a group of leading firms and institutions, from different areas of activity and regions of the world, who are directly involved in climate change issues. Their support is thankfully acknowledged.

Reference sponsors

BP

Endesa

FC2E, Fondo de Carbón para la Empresa Española

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Eni

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Mitsubishi Corporation

Unión Fenosa

With the support of

CEER, Council of European Energy Regulators

Club Español de la Energía

CNE, Spanish Energy Regulatory Commission

Fundación Biodiversidad, Spanish Ministry for the Environment

IETA, International Emission trading Association

Spanish Office for Climate Change, Spanish Ministry for the Environment