MOBILIZING CLIMATE FINANCE
A ROADMAP TO FINANCE A LOW-CARBON ECONOMY

REPORT OF THE CANFIN-GRANDJEAN COMMISSION
JUNE 2015

Acting on climate is not a choice between the economy and environment. All we need is political will, but political will is a renewable resource.

Al Gore, September 23rd, 2014

This report presents the conclusions of the Canfin-Grandjean Commission and proposes to the President of the French Republic paths of action to mobilize increased public and private funding in the fight against climate change. It also forwards proposals on how the French government could advance the 'innovative climate finance agenda' in the various international forums in which it participates (G7, G20, IMF, OECD, etc.). The present report covers the financial instruments identified more than a decade ago as 'innovative' (financial transaction tax, carbon market auctions revenues, etc.). It, however, goes further to also look at the means of finding 'innovative' ways of using existing tools in the 'toolboxes' of both private and public actors to scale-up financial flows for the low-carbon economy.

PRESENTATION OF THE CANFIN-GRANDJEAN COMMISSION

PRESIDENT OF THE FRENCH REPUBLIC

Paris, 25 February 2015

Dear Minister,
Dear Sir,
Dear Pascal, [handwritten]

In late 2015, France will be hosting the 21st session of the Conference of the Parties to the United Nations Framework Convention on Climate Change. One of the key points of these major negotiations will be compliance with the commitments made in Copenhagen in 2009 as regards funding for the countries of the South ($100 billion per year of public and private funding from 2020). Restoring confidence in this area is, as believe the vast majority of observers and stakeholders, an absolutely necessary condition for the Paris Conference to be successful. That is why France will be mobilizing the national leaders and decision-makers concerned around the theme of financing.

In a difficult budgetary context for many countries, which makes increasing tax pressure very difficult, it will be necessary to develop the use of innovative financing mechanisms to meet those commitments.

To address that goal, I am entrusting you with co-chairing an independent commission, which will be responsible for advising the government on how to advance the innovative financing agenda in the various international forums in which it participates. To do so, the commission will review the stage of development and the potential of the various innovative financing mechanisms proposed to date aimed at facilitating the funding of climate change mitigation and adaptation in the countries of the South. It will be useful for the commission to make contact with the German Federal Ministry of the Environment, which commissioned a review of innovative climate financing mechanisms from the think tank CICERO in the framework of the German G7 Presidency, in order to draw on that analytical work, the initial results of which should be available in late March.

The commission will be made up of economists, experts, financial stakeholders and representatives of companies concerned by climate change. Representatives of the Ministry of Finance and Public Accounts, the Ministry of Foreign Affairs and International Development, and the Ministry of Ecology, Sustainable Development and Energy, will also be involved in its work.

The commission may hear anyone whose opinion and expertise are needed. It will present its conclusions to decision-makers in the form of a report, in late May 2015.

It will decide its working schedule and provisional agenda during its inaugural meeting. Its conclusions will be made public.

As chair, please keep me updated regularly of the progress of the commission's work.

Yours sincerely,

Best regards, [handwritten]
[Signature]
François Hollande

Mr Pascal Canfin
Former Minister

Mr Alain Grandjean
Economist

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY . . . 10
2. CONTEXT . . . 20
2.1 THE TRANSITION TO A LOW-CARBON ECONOMY . . . 20
2.1.1 The beginning of a decoupling between GDP and CO2 emissions . . . 20
2.1.2 The milestones of a roadmap to finance a low-carbon economy . . . 23
2.1.3 Investing more, and better, than today . . . 24
2.2 ADAPTATION FINANCING NEEDS FOR THE MOST VULNERABLE COUNTRIES . . . 28
2.2.1 Funding for adaptation: what does this imply? . . . 28
2.2.2 Financing for adaptation: state of play . . . 29
2.3 THE CURRENT MACROECONOMIC CONTEXT IS AN OPPORTUNITY FOR LOW-CARBON INVESTMENT . . . 32
2.4 THE ROLE OF DEVELOPED COUNTRY CAPITAL IN FINANCING LOW-CARBON DEVELOPMENT IN THE DEVELOPING WORLD . . . 34
2.5 IDENTIFYING BARRIERS TO BETTER OVERCOME THEM. . . . 37
2.5.1 The over-arching barriers to private sector involvement in low-carbon investment. . . . 37
2.5.2 Improving the risk/return profile of investments . . . 39
2.5.3 The high level of transfer risk for many developing countries' currencies. . . . 42
2.5.4 The challenge of transforming needs into bankable projects . . . 42
3. THE ROADMAP TO FINANCE A LOW-CARBON ECONOMY . . . 46
3.1 10 KEY PROPOSALS . . . 46
3.2 THE CARBON PRICE SIGNAL . . . 49
3.2.1 Establishing a 'carbon price corridor' . . . 49
3.2.2 Redirecting fossil fuels subsidies . . . 51
3.3 INTEGRATING THE 2°C SCENARIO IN MACROECONOMIC SCENARIOS AND MODELS. . . . 52
3.4 MOBILIZING ADDITIONAL RESOURCES THROUGH 'INNOVATIVE FINANCING'. . . . 54
3.4.1 The financial transaction tax (FTT) . . . 54
3.4.2 International transport . . . 56
3.4.3 Carbon market revenues . . . 59
3.5 INCREASING THE LEVERAGE OF PUBLIC RESOURCES. . . . 60
3.5.1 The key role of development banks . . . 60
3.5.2 Preventing future capital constraints for development banks . . . 65
3.5.3 Improved coverage of political risks for low-carbon projects . . . 68
3.5.4 Using the IMF's Special Drawing Rights for climate action? . . . 70
3.5.5 Supporting the development of low-carbon, climate-resilient projects . . . 72
3.6 MOBILIZING PRIVATE FLOWS TOWARDS THE TRANSITION OF A LOW-CARBON ECONOMY . . . 74
3.6.1 The initiatives of private financial sector actors to finance the transition to a 2°C economy. . . . 74
3.6.2 Initiatives to integrate the climate challenge in financial regulation . . . 76
3.6.3 Scaling-up the green bonds market . . . 78
3.6.4 Adapting international accounting standards . . . 80
3.6.5 What role for the monetary policy in response to climate change?. . . . 82
4. MONITORING THE LONG TERM IMPLEMENTATION OF THE ROADMAP TO FINANCE A LOW-CARBON ECONOMY . . . 86
5. APPENDICES . . . 90

FIGURES

Figure 1 The triangle of paradoxes . . . 10
Figure 2 The share of green infrastructure investments is estimated in the range of 7 to 13% in 2013 . . . 11
Figure 3 The four dimensions of a low-carbon financial roadmap . . . 12
Figure 4 Growth of global GDP and CO_2 emissions from 1960 to 2010 . . . 21
Figure 5 Projected growth until 2050 of global GDP and CO_2 emissions in a 2°C scenario . . . 21
Figure 6 Global investment requirements, 2015 to 2030, in $ trillion . . . 25
Figure 7 Global infrastructure needs, 2015-2030 - $ trillion in 2010 . . . 25
Figure 8 Climate finance are estimated between $ 340 and $ 650 billion in 2014 . . . 26
Figure 9 The share of green infrastructure investments is estimated in the range of 7 to 13% in 2013 . . . 27
Figure 10 Share of funding for adaptation from developed countries to LDCs in 2015 . . . 29
Figure 11 Articulation of development finance and climate finance . . . 31
Figure 12 The growth of central banks' balance sheets since 2008 . . . 32
Figure 13 The triangle of paradoxes . . . 33
Figure 14 Every 1% increase in the required rate of return increases capital costs by $ 40 billion per year . . . 39
Figure 15 A project company financing model . . . 40
Figure 16 Gaps in the types of support provided to improve access to finance . . . 43
Figure 17 The four dimensions of a low-carbon financial roadmap . . . 48
Figure 18 Different methods of putting a price on carbon . . . 49
Figure 19 A carbon price "corridor" . . . 50
Figure 20 Estimated revenue generated by cost of offsets to reduce CO_2 emissions from international aviation . . . 58
Figure 21 Summary table of potential revenues from selected market mechanisms . . . 60
Figure 22 Capital use ratios of Multilateral Development Banks in 2014 . . . 65
Figure 23 Two thirds of the financial support from development finance institutions is allocated to public sector organizations. . . . 72
Figure 24 The different means of integrating climate change into financial regulation . . . 77
Figure 25 The repartition of green bonds by emitter . . . 79
Figure 26 A 360° strategy to finance a low-carbon economy . . . 86

BOXES

Box 1 10 key recommendations for the roadmap to finance a low-carbon economy . . . 14
Box 2 Infrastructure investment needs for a low-carbon economy: the New Climate Economy's scenario . . . 24
Box 3 The important role of local authorities . . . 27
Box 4 Proposition to articulate climate finance and development finance . . . 31
Box 5 The development of South-South cooperation . . . 35
Box 6 Barriers to Private Sector Involvement in Low-Carbon Investment, according to the Green Climate Fund (2013) . . . 38
Box 7 The cost of capital for an infrastructure project company - and how it can be lowered . . . 40
Box 8 Hedging transfer risk . . . 42
Box 9 A selection of ongoing current to integrate climate and energy dimensions in economic modeling . . . 53
Box 10 Fiscal justice and development . . . 56
Box 11 Subordinated debt . . . 61
Box 12 First-loss guarantee . . . 61
Box 13 South Africa's Renewable Energy Independent Power Producers Procurement Program (REI4P) . . . 62
Box 14 Increasing the impact of public funds through financial innovation . . . 63
Box 15 How are national commitments vis-à-vis public banks registered in public accounts? . . . 67
Box 16 The case of AFD . . . 68
Box 17 Export credit agencies and climate change . . . 73
Box 18 Insuring against climate change . . . 80
Box 19 Making regulatory measures conducive to holding long-term assets (Basel 3 and Solvency 2) . . . 81
Box 20 Mobilising the European Union . . . 83

THE MEMBERS OF THE COMMISSION

This commission is composed of two co-presidents, Pascal Canfin and Alain Grandjean, and two reporters, Ian Cochran and Mireille Martini.

Pascal Canfin was Minister for Development under the Ministry of Foreign Affairs between May 2012 and April 2014. At present, he is Senior Advisor on Climate at World Resources Institute (WRI), on the preparation of the CoP21. He was also a Member of the European Parliament from 2009 to 2014.

Alain Grandjean graduated from Ecole Polytechnique and ENSAE and holds a PhD in environmental economics. He chaired the Committee of Experts of the National Debate on Energy Transition. Co-founder and partner of Carbone 4, he is member of the Scientific Committee of the Nicolas Hulot Foundation.

Ian Cochran is a Research Unit Manager at CDC Climat Research and leads the public-interest think tank's work on investment, climate and decision-making support. Ian lectures in master-level programs at Sciences-Po Paris and Université Paris-Dauphine. He holds a PhD from Université Paris-Dauphine and an MPA from Sciences-Po.

Mireille Martini graduated from the French business school ESSEC and subsequently worked in the project finance teams of Credit Lyonnais in Moscow, of the European Bank for Reconstruction and Development in London, and then in the Infrastructure Team of Caisse des Dépôts in Paris. She is now part of the research team of the Chaire Energie et Prospérités, within the Institut Louis Bachelier.

ACKNOWLEDGMENTS

The Commission could not have completed this report without the availability proved by the 76 people interviewed. They are warmly thanked here and listed in the appendices.[1]

We address special thanks to Nicolas Hulot, the members of our teams (Charlotte Cristofari, Ramona Radu and Valentin Przyluski), the World Resources Institute, the Nicolas Hulot Foundation team (Marion Cohen, Denis Voisin and Matthieu Orphelin), members of the CDC Climat Research team (Romain Morel, Hadrien Hainaut, Matthieu Jalard, Emilie Alberola, Marion Afriat, Lara Dahan, Manasvini Vaidyula and Adam Gordon), Jean-Marc Jancovici, Stéphane Hallegatte, Cédric Philibert, Claude Henry, the Carbone4 team, Gaël Giraud, Didier Janci, Nick Robins and the New Climate Economy team.

We equally thank our interlocutors within the French government as well as the Presidency of the Republic for their availability and involvement.

1. Please note: the views expressed in this report are those of the co-presidents and reporters. They do not reflect the opinions or positions of the persons interviewed, nor their respective institutions.

THE LIST OF INTERVIEWS CONDUCTED BY THE COMMISSION

- Arndt Matthew, Head of Environment, Climate and Social Policy, European Investment Bank
- Badré Bertrand, Managing Director and Chief Financial Officer, World Bank Group
- Baron Richard, Policy Analyst – Climate and Green Investments, OECD
- Barrett Chris, Executive Director - Finance and Economics, European Climate Foundation
- Barsacq Elisabeth, Ambassador, Permanent Delegation of France to the IMO
- Baule Frédéric, Consultant at Cédrac Conseil and former Vice President - Market Risk Management, Total Marketing Services
- Ben-Jaafar Samy, Director, Private Sector Facility, Green Climate Fund
- Benicchio Romain, Senior Policy Advisor, Oxfam International
- Bolton Patrick, Professor - Business Finance and Economics, Colombia University
- Buchner Barbara, Senior Director, Climate Policy Initiative
- Buckle Simon, Head of Climate Change, Biodiversity and Water Division, OECD
- Campanale Mark, Founder and Executive Deputy Chairman, Carbon Tracker
- Charton Philippe, Financial Director, Bouygues Construction
- Clapp Christa, Team Leader and Senior Adviser - Climate Finance, CICERO
- Clerc Laurent, Director Financial Stability, Bank of France
- Courcier Jérôme, Director - Sustainable Development, Crédit Agricole SA
- D'Hardemare Benjamin, Founder and CEO, Planetic
- Denoyel Gilles, President - International Institutional Relations in Europe, HSBC
- Déau Thierry, Chairman and CEO, Meridiam
- Ducret Pierre, Caisse des dépôts
- Ebinger Jane, Manager - Climate Policy and Finance Team, Banque Mondiale
- Elouardighi Khalil, Programme manager, Coalition Plus
- Forestier Pierre, Head - Climate Change Division, Agence Française de Développement
- Fox Chris, Director - special projects, CERES
- Gaudeul Sophie, Confederal Secretary, Confédération française démocratique du travail
- Gilad Jonathan, Direction générale française de l'aviation civile
- Giraud Gaël, Chief Economist, Agence Française de Développement
- Guérin Lionel, CEO, Air France
- Guez Hervé, Head of Socially Responsible Investing Reserach, Mirova - Natixis
- Heller Tom, Director, Climate Policy Initiative
- Hemmings Bill, Program Manager - Aviation & Shipping, Transport & Environment
- Hobley Anthony, CEO, Carbon Tracker
- Hourcade Jean-Charles, Director of research at CNRS and Director of CIRED
- Huillard Xavier, CEO, Vinci
- Jesus Franck, Head of the Environment Division, Trade and Agriculture Directorate, OECD
- Janci Didier, member of the French Economic council for sustainable development (CEDD)
- Karmali Abyd, Managing Director, Climate Finance, Bank of America Merrill Lynch
- Kerr Tom, Lead Climate Policy Officer at the International Finance Corporation, World Bank Group
- Khan Farrukh, United Nations Office of the Secretary General
- Knowles Christopher, Head of the Climate Change & Environment Division, European Investment Bank
- Kyte Rachel, Vice president and Special Envoy for Climate Change, World Bank Group
- Koch-Weser Caio, Chair, European Climate Foundation
- Le Saché Fabrice, CEO, Ecosur
- Leguet Benoit, Managing Director, CDC Climate Research
- Ligot Jacquelin, Founder, Climate Energy Solutions
- Loyer Denis, CEO, NGO EtcTerra
- Lord Adair Turner, Senior Fellow, Institute for New Economic Thinking and Executive Chairman of the Financial Services Authority, United Kingdom
- Mazounie Alix, International policy advisor, Climate Action Network France
- Murphy Andrew, Policy Officer, Transport & Environment
- Nafo Seyni, Spokesperson African Group Negotiators, UNFCCC
- Naulot Alexandre, Policy and advocacy advisor on Climate and development finance - Oxfam France
- Neuneyer Dustin, Head of Continental Europe, Networks & Global Outreach, Principles for Responsible Investment
- Ockenden Stephanie, Economist/Policy Analyst - Development Co-operation Directorate, OECD
- Oppenheim Jeremy, Director of Mc Kinsey and New Climate Economy Programme Director
- Paugam Anne, CEO, Agence Française de Développement
- Pfeifer Stephanie, Chief Executive, Institutional Investors Group on Climate Change (IIGCC)
- Philiponnat Thierry, Executive Director of Europe, 2 Degrees Investing
- Pillan Aline, Deputy Director of Sustainable Development, Direction générale française de l'aviation civile
- Philon Dominique, Economist
- Pringuet Pierre, CEO, Association Française des Entreprises Privées
- Ramos Gabriela, Chief of Staff and Sherpa to the G20, OECD
- Reid Sue, Vice President of Climate and Energy Programs, CERES
- Robins Nick, Co-Director United Nations Environment Program Inquiry
- Rousseau Philippe-Olivier, Head of public Affairs, BNP Paribas
- Santini Jean-Jacques, Head of Institutional Affairs, BNP Paribas
- Schaal Andreas, Head of the Sherpa Office and the Global Governance Unit, OECD
- Schoenberg Martin, Head of European Union Policy, Institutional Investors Group on Climate Change
- Scialom Laurence, Economist
- Sicard Jean-Pierre, Deputy CEO, CDC Climate Research
- Stern Nicholas, Chair of Grantham Research Institute, London School of Economics
- Taylor Jonathan,Vice-President Environment and Climate Action, EIB
- Touati Julien, Corporate Development Director, Meridiam
- Upton Simon, D Environment Director, OECD
- Wilkins Michael, Managing Director, Standard & Poor's
- Wormser Michel, Former Chief Operating Officer, MIGA
- Zaouati Philippe, Deputy CEO, Natixis
- Zhu Shouqing, Senior Associate and Head of China Sustainable Finance Program, World Resources Institute

1. EXECUTIVE SUMMARY

1. EXECUTIVE SUMMARY

This report presents the conclusions of the Canfin-Grandjean Commission and proposes to the President of the French Republic paths of action to mobilize increased public and private funding in the fight against climate change. It also forwards proposals on how the French government could advance the 'innovative climate finance agenda' in the various international forums in which it participates (G7, G20, International Monetary Fund, Organization for Economic Cooperation and Development, etc.). The present report covers the financial instruments identified more than a decade ago as 'innovative' (financial transaction tax, carbon market auctions revenues, etc.). It, however, goes further to also look at the means of finding 'innovative' ways of using existing tools in the 'toolboxes' of both private and public actors to scale-up financial flows for the low-carbon economy.

This report is linked to two concurrent processes.

Firstly, this report is part of the larger run-up to CoP21 to be held in Paris between the 30th of November and the 11th of December, 2015. The core of the proposals forwarded in this report falls outside stricto sensu of the scope covered by negotiations within the framework United Nations Framework Convention on Climate Change (UNFCCC). Nevertheless, they serve to support the 'Compact ' or the 'Alliance' for climate that will be reached in Paris: this will include the formal UNFCCC agreement, as well as commitments made by public and private actors outside of the agreement itself. The proposals presented in this report can therefore contribute to the success of the financial dimension of the 'Paris Climat Compact' that, in our eyes, consists of three dimensions:

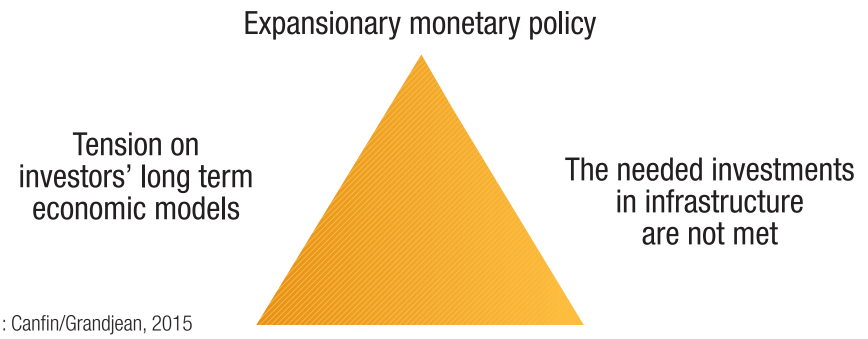
– Demonstrate how to honor the commitment made by developed countries at Copenhagen in 2009 of *"mobilizing jointly USD 100 billion dollars a year by 2020 to address the needs of developing countries";*

– Assist the most vulnerable countries to adapt to the consequences of climate change through dedicated commitments; and

– Make CoP21 a political milestone that communicates to economic decision makers and investors the coming acceleration in evolution of the 'rules of the game' to ensure that public and private investments are compatible with keeping the increase in global average temperature below 2°C.

Secondly, this report recognizes the current global economic context marked by the three elements include in the 'Triangle of Paradoxes':

Figure 1 The triangle of paradoxes

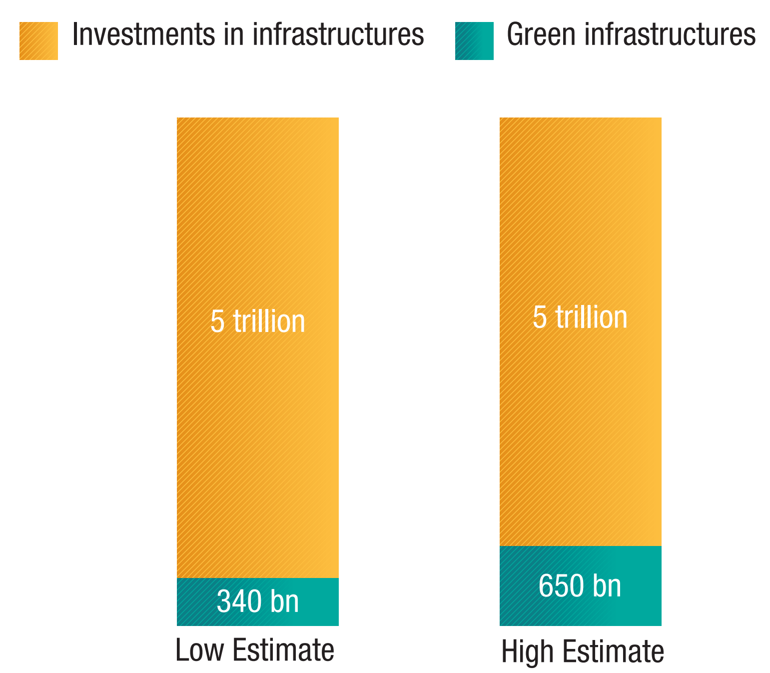


Source : Canfin/Grandjean, 2015

The monetary policies implemented to date by central banks have not led to a return to historic investment levels. Investment levels remain below those in 2008, This is the case despite the dramatic decline in interest rates in high-income countries. This in turn, has led to a strong demand from institutional investors for infrastructure investment opportunities - allowing a diversification of their financial portfolios given the current low returns on government bonds.

The transition to a low-carbon economy is a necessity in the light of climate change, but also a way of overcoming the current global macroeconomic and macro-financial difficulties. This will lead to an increase in low-carbon infrastructure. At present, only 7 to 13% of total global investments in infrastructure can be defined as 'green'[1].

Figure 2 The share of green infrastructure investments is estimated in the range of 7 to 13% in 2013



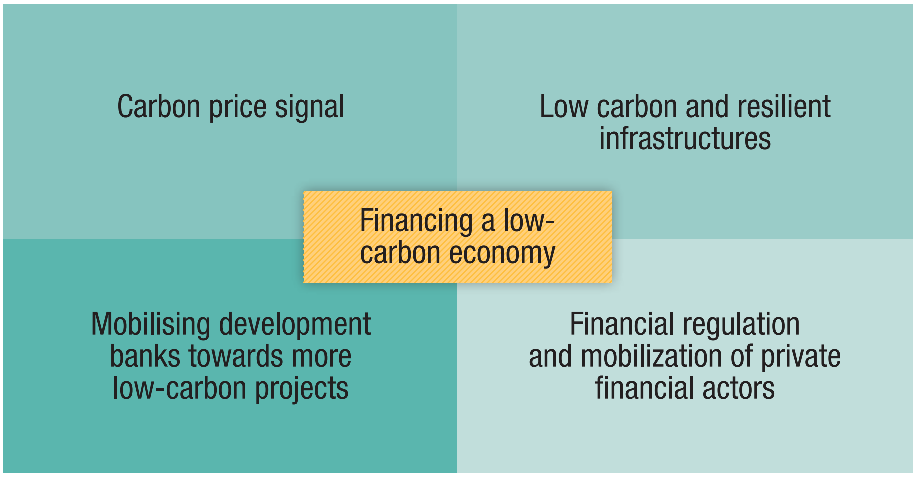
Source : Canfin/Grandjean, 2015, using data from United Nations Framework Convention on Climate Change, 2014 and New Climate Economy, 2014

This portion of total investment is clearly insufficient and is due to many factors analyzed in this report. In order to achieve a rapid increase in the share of 'green' investment requisite for the climate change challenge, we propose a 'low-carbon financial roadmap' coherent with the objective of limiting global warming to less than 2°C.

1. Calculated by Canfin / Grandjean after UNFCCC data

The individual proposals that make up this roadmap are detailed in the Section 3.1 of the report and can be grouped around the following four dimensions:

Figure 3 **The four dimensions of a low-carbon financial roadmap**



Source : Canfin/Grandjean, 2015

1. The carbon price signal

The first challenge is to phase out fossil fuel subsidies that act in many ways as a negative carbon price. According to researchers from the International Monetary Fund (IMF), they represent an economic cost of around $ 10 million dollars per minute! This is well above current subsidies for re-newable energy. The recent oil price decline is a historic opportunity to reduce these subsidies.

Furthermore, given the intense international discussion prior to the CoP21, we propose that devel-oped and emerging countries agree on a voluntarily basis – and outside of the scope of the UNFCCC international agreement – to a 'carbon corridor' or a 'carbon target' with a minimum target price of 15 to 20 dollars/ton of CO2 in 2020, and a maximum target price of 60 to 80 dollars/ton of CO2 in 2030/2035.

This 'carbon corridor' would allow Governments at CoP21 to transmit the necessary common political message, as well as the needed flexibility in price levels to gather countries with different levels of development.

2. Financial regulation and the mobilization of private financial actors

This report recognizes the numerous initiatives taken since the UN Climate Summit in New York in September 2014. It also reflects the unprecedented awareness in the financial world that has led to the integration of the climate challenge. This integration has evolved from being seen as part of 'extra-financial' or 'social and environmental responsibility,' to a potential major financial risk threatening the business models of companies, and financial stability in general. Actions in this area are accelerating as demonstrated by the following examples:

– the mandate given in April 2015 by the G20 to the Financial Stability Board (FSB);

– the vote in France in May on legislation mandating asset managers to communicate information on both their exposure to climate risks, particularly in terms of carbon footprint of their portfolios, and their contribution to limiting global warming; and

– the work of the People's Bank of China on 'greening the Chinese financial system' as part of the preparation of the next five-year plan.

3. Development banks [1]

This report lists proposals for financial innovation that will enable development banks to finance more low-carbon projects and increase their leveraging of private finance for these projects (development of guarantees, new role of development banks in relation to capital markets, strengthened capacity to support the emergence of low-carbon projects, management of political and convertibility risks, etc.). Given that each development bank is different, we propose that France requests each development bank develop its own '2°C financial roadmap' by CoP21. This document should explain how each institution sees its role in financing the low-carbon economy; the commitments it can make to support this transition; any constraints it faces including, if necessary, such as capital limitations, etc.

4. Low-carbon, climate-resilient infrastructure

Infrastructures is an essential part of the investments needs: sustainable urban infrastructure; production infrastructures and transmission networks for electricity; information technology (IT) networks enabling the convergence of the green economy and the digital economy, etc. Therefore, the goal is to remedy the current delay that the global economy has accumulated in financing infrastructures; and the reallocation of this funding from carbon intensive models to 'low carbon.' This reallocation has a relatively small additional cost, as demonstrated by the New Climate Economy report released in 2014.[2] Nevertheless, some of the intrinsic characteristics of 'low-carbon' infrastructure may lead to blockages or increase the cost of capital. This can include the absence of historic data to evaluate the future cash flow, weak expertise of administrations to integrate low-carbon specifications into public procurement and tenders, untested or unfamiliar economic models, etc.. Identifying and overcoming these obstacles, particularly in developing countries, is a key dimension of the low-carbon financial roadmap. That is why we propose that some of the international community's development objectives should be formulated as goals, such as a decrease in the cost of capital for renewable energy in developing countries.

The combination of these four dimensions can give coherence and effectiveness to the financing of a low-carbon economy. The resulting integrated roadmap should be monitored by the international community, which is not yet the case today.

In order to ensure continuity in the monitoring of the roadmap to finance a low-carbon economy, we propose that before the CoP21 the IMF and the World Bank should be mandated to monitor the implementation of this roadmap, in coordination with institutions deemed relevant to perform this task, particularly those under the United Nations Framework Convention on Climate Change (UNFCCC).

1. This report uses the generic 'Development Bank' term to refer to: Multilateral Development Banks, Multilateral Financial Institutions, Multilateral Development Institutions, Regional Banks, Banks and national development agencies.

2. NCE (2014) Better Growth, Better Climate, Global Commission on the New Climate Economy.

10 KEY RECOMMENDATIONS FOR THE ROADMAP TO FINANCE A LOW-CARBON ECONOMY

1 Establish a monitoring process for the low-carbon financial roadmap to ensure its longevity beyond CoP21. The IMF and the World Bank could be charged with the supervision and implementation of this roadmap, in coordination with the institutions deemed relevant to perform this task, particularly within UNFCCC. The objective will be to monitor, in particular, the development of the carbon price signal (including phasing out fossil fuel subsidies), the reforms allowing the removal of barriers to investment in low-carbon infrastructure, the '2°C roadmaps' of development banks, the integration of climate risk in financial regulation, the relative volume of 'green' investments compared with total global investments in infrastructure and the evolution in the decoupling of GDP and greenhouse gas emissions. ■

2 Establish a carbon price signal. A voluntary commitment from developed and emerging countries to put an explicit carbon price signal into effect, between a minimum target price of 15 to 20 dollars/ton of CO2 in 2020, and a maximum target price of 60 to 80 dollars/ton of CO2 in 2030/2035, according to levels of development. ■

3 Integrate climate in macro-economic models. The integration of a 2°C scenario throughout the macroeconomic forecasts and models of international institutions (IMF, OECD, etc.) and finance ministries in order to ensure a better coherence between short-term analysis and forecasts, and long-term low-carbon objectives. Any model or forecast, for example energy market forecasts, that is incompatible with the 2°C limit should be explicitly identified as such. ■

4 Development of national strategies to finance the decarbonization of the economies. Governments, beginning with developed countries, should produce national decarbonization strategies for their economies, covering the needed financing, both public and private. France has adopted the principal of such a strategy in its law on the energy transition for green growth; the G7 countries also committed to this principal in June 2015[1]. Among the key indicators for such strategies could be the relative volume of 'green' investments compared with total global investments made each year, combined with annual targets. France could propose to that IMF and the World Bank monitor this indicator, country by country, and to aggregate investment levels at the global level. ■

5 Request that each development bank develop a '2°C investment roadmap' compatible with the 2°C limit. This roadmap should specify how the development banks intends to contribute to the fulfillment of the 2°C limit agreed to by the international community. A joint monitoring process by multilateral, regional and bilateral development banks could be established, with a public report presented every two years during General Meetings of the IMF and the World Bank. ■

1. « To this end we also commit to develop long term national low-carbon strategies », G7, Déclaration de juin 2015

6 **Increase the use by development banks of instruments and tools with high leverage ratios,** such as guarantees, subordinated debt or credit enhancement, to increase climate finance at comparatively low costs. France could request development banks to estimate their capacity to mobilize additional climate finance through an increased use of these tools.
In the particular case of France, the Agence Française de Développement (AFD) is today the only international development finance institution subject to Basel 3 prudential regulation. According to our estimations, if aligned with the prudential frameworks used by other development banks, the AFD could increase its activity by € 1 to 2 billion. ■

7 **Include in the 2016 G20 work program the forthcoming recommendations of the Financial Stability Board (FSB)**, which was mandated in April 2015 by G20 finance ministries to analyze the potential impacts of climate change on financial stability. ■

8 **Request that the Bank for International Settlements (Basel Committee) define methods to include climate risks in stress tests for banks and insurance companies.** This should include methodologies to assess the performance of assets held by banks and insurance companies in the +4°C scenario as developed by the International Panel of experts on Climate Change (IPCC). France, in partnership with other countries, could formally request the Basel Committee on this issue. ■

9 **Establish a public monitoring system for financial actors' engagements** that have multiplied in recent months, including: the integration of climate risk; measuring greenhouse gas emissions induced by their financial activities; and increasing financing for the green economy. The UNFCCC's Nazca Platform, which centralizes these commitments, can be used and further developed by CoP21 in order to increase the visibility of progress in this area within the broader 'Agenda of Solutions.' These commitments could be comprised in an annual public report.
In the particular case of France, the recently voted provisions of the energy transition for green growth legislation require institutional investors to measure the greenhouse gas emissions linked to their financial activities and to explain how they address the 2°C scenario. These same provisions could be usefully extended to private banks concerning their lending activities. ■

10 **Adopt the methodology developed by the OECD in June 2015 to analyze the alignment of public policies with low-carbon development.** This is a key means of assessing the integration of progressive decarbonization targets in all public policies. We propose that France be part of the first countries to commit to apply this framework internally and urge other member countries of the OECD and OECD key partners[1] to do so before the CoP21.
*In the particular case of the European Union (EU), the financing of the Juncker Plan totaling € 315 billion could be made conditional on climate co-benefits criteria and projects related to the implementation of the low-carbon transition could be prioritized (energy efficiency and technology projects). France could communicate broadly on its recent legislative developments to integrate climate issues into financial regulation. The French government could p*ropose to its European partners to move forward in this direction. *France could therefore request that the European Commission addresses this issue and proposes a plan of action for the next 2 to 3 years to be delivered ahead of CoP21.* ■

1. OECD Key partners are Brazil, China, India, Indonesia and South Africa.

Why does this matter for developing countries?

Developing countries remain largely outside of existing international private capital flows. The reallocation of these flows is therefore principally an issue for developed and emerging countries. Nevertheless, the proposed agenda to reorient private capital flows holds significant benefits for developing countries.

1. Firstly, mitigation action and the achievement – or not –of the 2°C limit by developed and emerging countries will have direct consequences on the most vulnerable countries. The sooner investment flows are 'greened,' the less severe the impacts from climate change will be.

2. An increasing number of African countries are seeing the development of domestic capital markets (Nigeria, Kenya, Ethiopia…). These countries will benefit from the work realised to integrate climate issues into market regulation, both in terms of information systems and risk management.

3. The additional mobilization of risk hedging tools by development banks will allow private investors to invest more easily in countries that they do not consider today as part of their investment universe.

4. Developing and emerging countries host many of the central banks that are the most active in channelling domestic financial flows towards green projects. Bangladesh is a striking example, as well as Brazil, China, Indonesia.[1] This is thus not only an issue on the 'Northern political agenda,' but on the contrary, a common concern that has already found concrete translation in the global South; at least as much as in the North. This increases the potential of international cooperation on the matter.

In parallel to the integrated global roadmap for the financing a low-carbon economy, this report looks at a number of the 'innovative' financing instruments that could allow the mobilization of additional, and particularly public, climate finance.

Among the existing 'menu of options for innovative financing,'[2] this report has analyzed in detail: the potential financial resources from the financial transaction tax (FTT) under voluntary negotiation between 11 European Member States; the potential revenues from carbon offsetting in international transport; and carbon market auction revenues.

France has repeatedly announced its willingness to earmark a significant portion of the revenues of a FTT for climate at the international level. The ongoing negotiations on such a tax among 11 Member States of the European Union is a key element in assisting, notably France, the mobilization of additional public funding for climate in order to fulfill the '$ 100 billion of Copenhagen' commitment. To this end, this report concludes that at least € 10 billion in revenues from the TTF will be needed in 2020 among the 11 Member States. Negotiations must conclude no later than September in order to optimize its potential contribution to the success of the CoP21.

In terms of international transports, this report has particularly analyzed the case of international aviation. In 2010, the aviation sector committed to an aspirational goal of carbon-neutral growth from 2020; the specific means of achieving this objective to be announced in 2016. In addition to energy efficiency standards for airplanes and engines,

1. UNEP Inquiry (2015a) The coming financial climate, UNEP Inquiry into the Design of a Sustainable Financial System.

2. The 'menu of options' refers to the work of the Leading Group on Innovative Financing for Development

whose application must be accelerated and widespread, the implementation of this commitment increasingly appears to include the creation of carbon offsetting. If focused on developing countries, and in particular the most vulnerable countries, this could generate between $ 2 and 6 billion in financial climate flows in 2025. This is increasingly recognized as the most economical way for the sector to fulfill its engagement. Furthermore, it could also finance at scale the restoration of degraded agricultural lands.

Moreover, developed countries' capacity to mobilize revenues earned from carbon markets depends on the sovereign political decision to allocate part of these revenues to international actions. If, for example, 25% of revenues generated by the Emissions Trading Scheme (ETS) of the European Union were allocated for climate in developing countries – compared to 14% today - this could represent between € 3.5 to 5 billion a year on average, over the period 2015-2030, depending on to carbon price assumptions.

Finally, mobilizing more climate finance involves several key elements: more public funds; the improved leveraging of public funds and the increased use of public guarantees to the mobilize private funds; and the scaling-up of private investment flows towards a low-carbon economy. Most of the mobilization of public and private flows has – and will– come from domestic sources. The role of North / South flows and development banks is nevertheless critical, particularly in the least developed countries.

Thus at both the national and international level, the role of government is twofold: to provide financing or guarantees, and to establish the rules of the game that incentivize the redirection of private investments towards a low-carbon economy.

MOBILIZING CLIMATE FINANCE A ROADMAP TO FINANCE A LOW-CARBON ECONOMY