
Confidence
must be earned

Amundi
ASSET MANAGEMENT

November 2019

Climate Change

Frederic Samama

Head of Responsible Investment

Executive Summary

**BOOMING
BUT
CONFUSING**

- EUR30tn
- All players are getting involved...even in the US
- But lack of clarity on Terms & Objectives & Impacts

AMUNDI

- Already massive RI investments
- Part of its DNA & new ambitions
- Two major topics: inequalities and climate change
- **Products & *Positionning*:**
 - Long history
 - Leading position (green bonds, low carbon indexes, etc.)
 - Unique partnerships with clients (AP4, IFC, etc.)
 - Unique recognition within the industry (Central Banks, SWFs,
- **Unique partnership with Sweden**

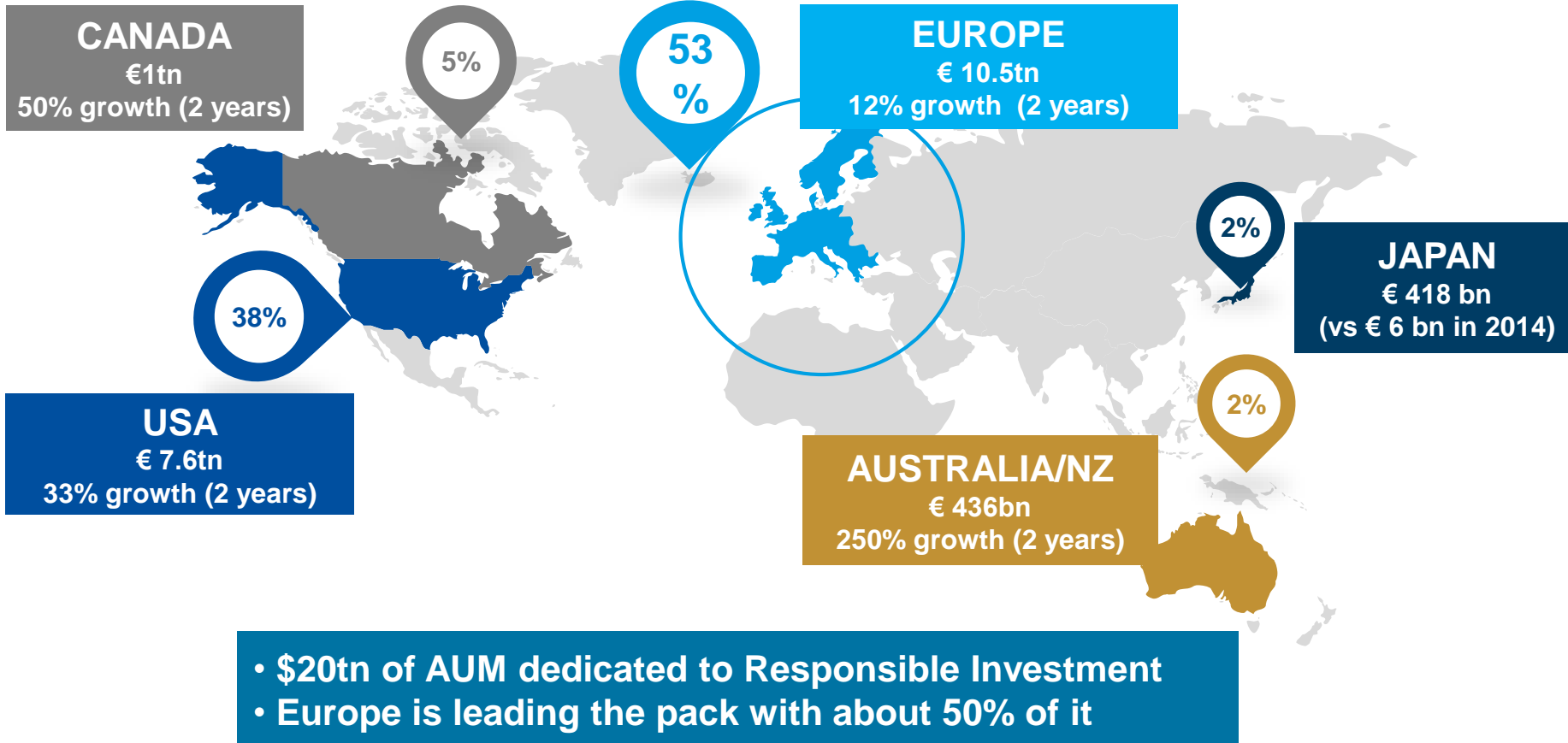
ESG: Europe is Leading

€ 20tn

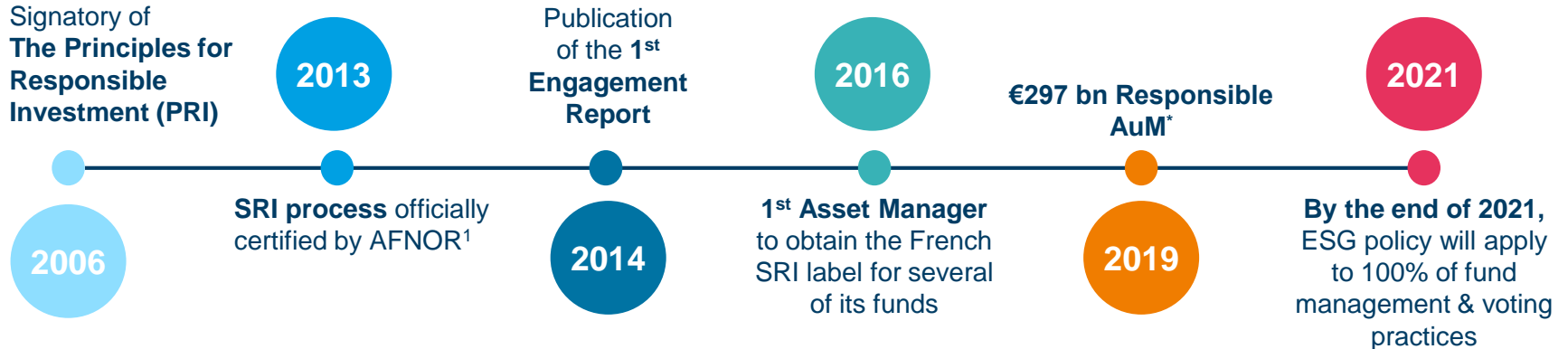
Responsible Investment Market
(2016)

~ 25%
of global AUM

+25%
Growth in 2 years



Amundi: A long-standing player in Responsible Investing

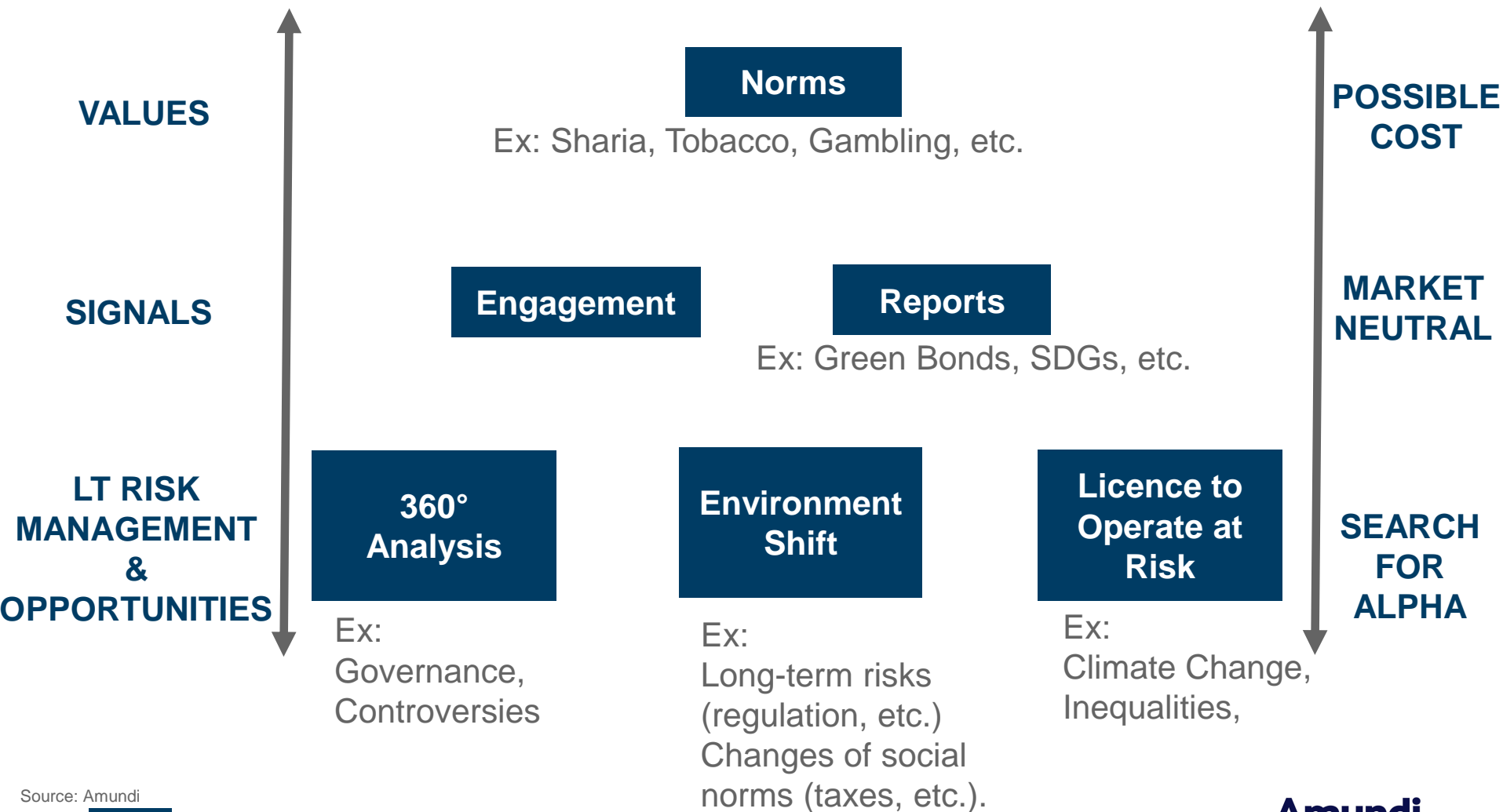


 <p>RECOGNIZED EXPERTISE</p>	<p>Rated A+ by PRI²</p> 	<p>Best SRI Analysts & Corporate Governance, Top 3 in 2014, 2015, 2016</p> 
	<p>1st place in the SRI & Sustainability ranking from 2015-2019 by Extel/UKSIF³</p> 	<p>2017 SRI Award for the quality of its Responsible approach</p>  
	<p>1st Asset Manager's SRI approach certified by the AFNOR¹</p> 	<p>Several funds received the SRI Label by the French Ministry of Finance</p> 

*AuM as of end June 2019, 1.AFNOR: recognized independent certification organization supervised by the French Ministry of Industry, a member of ISO.

2 PRI Assessment rating scale: A+, A, B, C, D, E, 3 EXTEL: European Independent firm in survey and evaluation of quality across the European investment industry

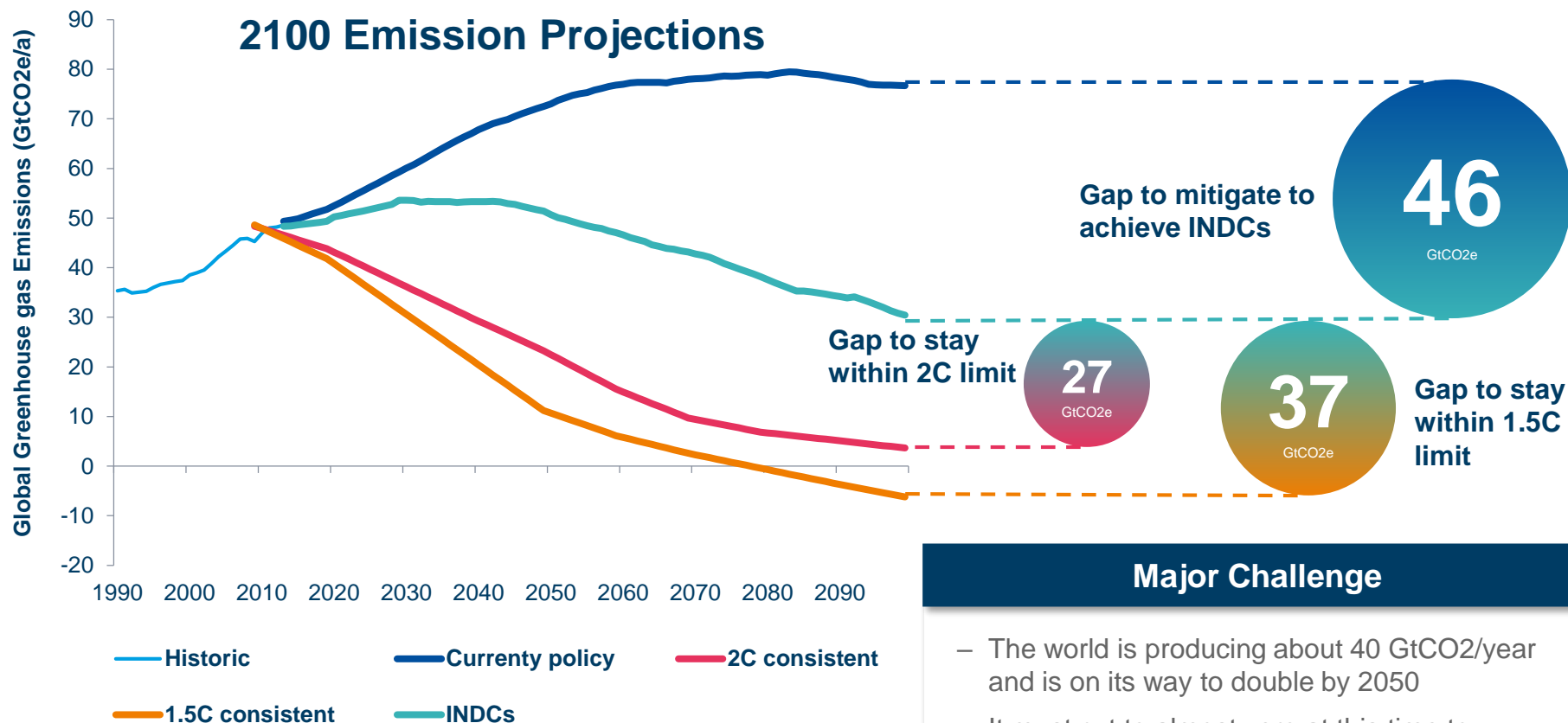
ESG mapping, a growing split of objectives



Source: Amundi

Unprecedented Challenge

Global emission gaps



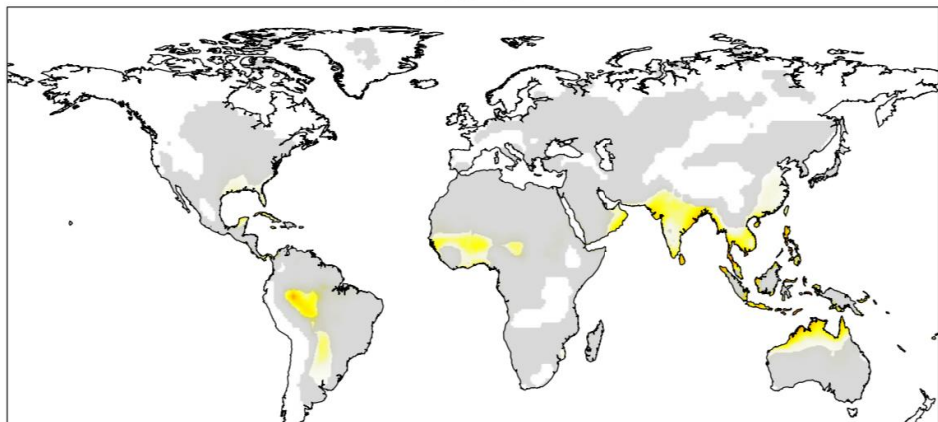
Major Challenge

- The world is producing about 40 GtCO₂/year and is on its way to double by 2050
- It must cut to almost zero at this time to achieve the 1.5 degree increase objective

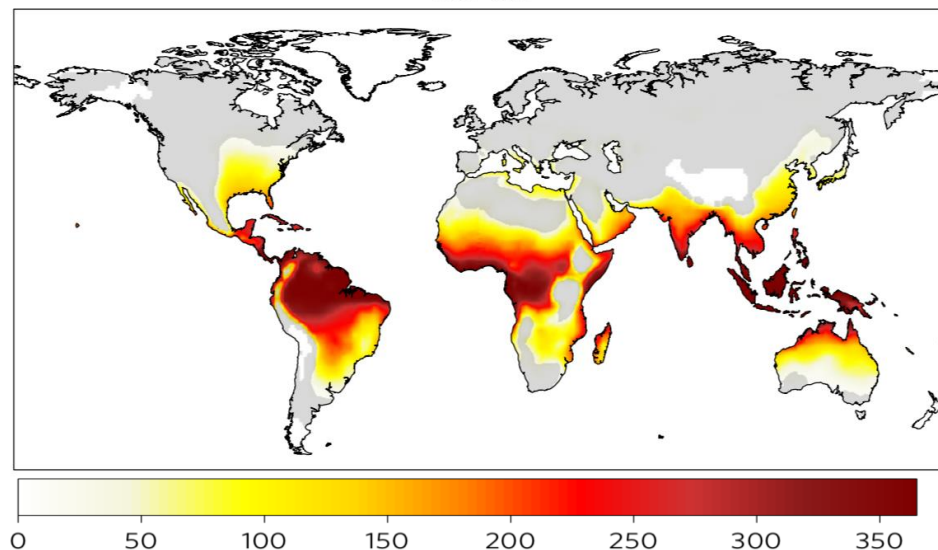
Source: Climate Action Tracker Database, Global emissions time series, updated November 2017. Time series data for INDCs, 2C consistent, 1.5C consistent time series are computed as medians of highest and lowest potential global emission level results.

Impacts of Temperatures on Where to Live

Historical



RCP 8.5



Number of days per year above deadly threshold

* Source: Global Risk of Deadly Heat (Science 2017)

—Human beings must regulate their internal heat, and so they are exposed to the mix of :

- External temperatures and
- Humidity

—In 2000*, this was already a severe risk:

- 13.2% of the planet's land area where 30.6% of the population resides...
- was exposed to 20 or more days when temperatures and humidity surpassed the threshold beyond which such conditions become deadly.

—By the end of the century, in a BAU scenario, entire regions of the world would be inhabitable.

Recognition of Climate change as the Biggest Risk

The Global Risks Landscape 2018



HIGH CLIMATE CHANGE RELATED RISKS

- Now the biggest risk at Davos in terms of impacts and likelihood.
- A clear trend just after the financial crisis.

Source: World Economic Forum, « The Global Risks Report 2018 »

Central Banks' Mobilization on Climate Change

ONE PLANET SUMMIT

- **Reiterate France's commitment**
 - Organized by President Macron on Dec. 12, 2017
 - Gather international leaders and committed citizens
 - Creation of One Planet Coalition, 12 commitments 
 - Article 173 cited as an example
- **Call for action**
 - Scale up finance for climate action
 - Green finance for sustainable business
 - Accelerate local and regional climate action
 - Strengthen policies for ecological and inclusive transition

CENTRAL BANK NETWORK TO GREEN THE FINANCIAL SYSTEM¹

- **46 Central Banks and supervisors**
- **3 missions:**

**Share
experience
and best
practices**

**Contribute to
environmen-
tal and
climate risk
management
development**

**Mobilize
mainstream
finance to
support the
energy
transition**

« NGFS Members acknowledge that climate-related risks are a source of financial risk.

It is therefore within the mandates of Central Banks and Supervisors to ensure the financial system is resilient to these risks”

1. “Joint-statement by the Founding Members of the Central Banks and Supervisors Network for Greening the Financial System,” Dec. 12, 2017, accessible at: https://www.banque-france.fr/sites/default/files/medias/documents/joint_statement_-_greening_the_financial_system_-_final.pdf

2. Website of Climate Action 100, as of Dec. 20, 2017, accessible at: 20 <http://www.climateaction100.org/>

3. “French Business Climate Pledge – les entreprises françaises s'engagent pour le climat”, accessible at: <http://www.medef.com/uploads/media/node/0001/13/4a63d832010c7ec5ac57b6c345f72f1b44a84ae0.pdf>

Amundi wide range of Green Solutions

EQUITY

PASSIVE	ACTIVE
<ul style="list-style-type: none"> • Decarbonized Index & Smart Beta ^M • ETF Low Carbon ^F 	<ul style="list-style-type: none"> • CPR Invest Climate Action ^F • KBI Equity Fossil Free Funds (Europe, EM, Global) ^F • KBI Natural Resources (Energy, Water, Agriculture, Global Resources) ^F • Amundi Green Tech ^F • Amundi Fund Global Ecology ^F

FIXED INCOME

PASSIVE	ACTIVE
<ul style="list-style-type: none"> • Passive Low Carbon ^M 	<ul style="list-style-type: none"> • Global Corp ^M • Global Green Bonds Strategy ^F • Amundi Impact Green Bonds ^F • Amundi Responsible Investing – Green Bonds ^F • Amundi/IFC ^F • Greco/EIB ^F • Pioneer Interval ILS ^F

REAL ASSETS

INFRASTRUCTURES

AMUNDI Energy Transition ^F
EDF Joint Venture

PRIVATE EQUITY

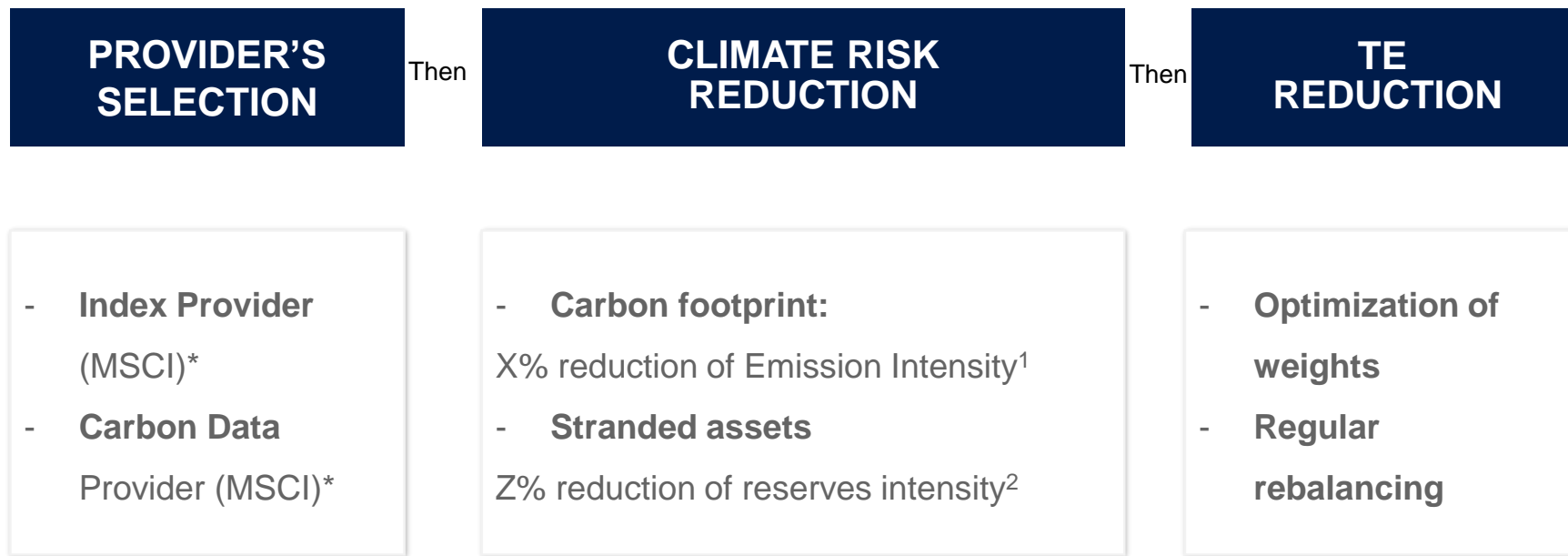
CEA Joint Venture
Supernova Invest ^F

REAL ESTATE ^F

Amundi's solutions cover the full spectrum of green assets: EUR50bn

M Mandates
F Funds

Methodology 1.0: low carbon indices

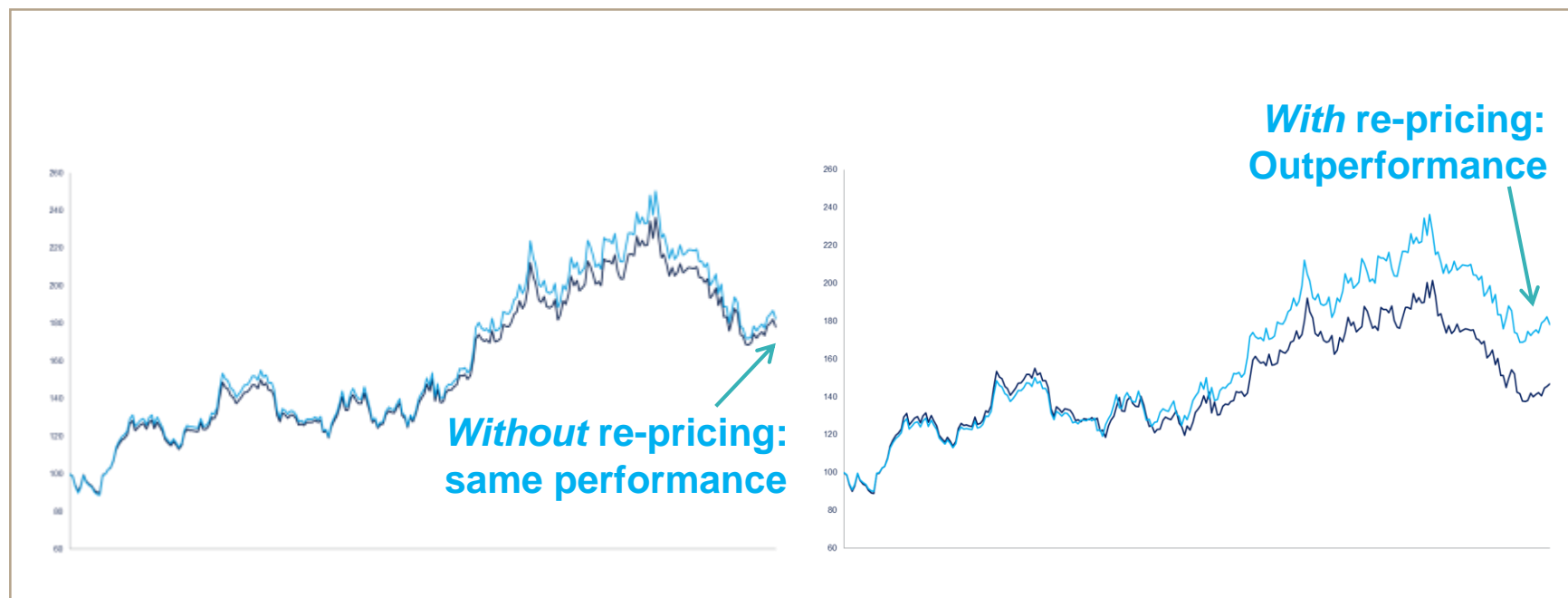


(1) Carbon emissions divided by sales

(2) Potential cumulative emissions from reserves divided by market cap

* As an example

Free option on climate change risk pricing



— Benchmark

— Low Carbon Low TE

— Benchmark

— Low Carbon Low TE

« Free Option » :

- Either no *climate change impact*: same performance
- Or a *climate change impact*: outperformance

Source: Amundi Investment Solutions / Random simulations with annual volatility at 20%, annual expected return 7% and a 0,5% TE. **Past market trends are not a reliable indicator of future ones. Past performance does not prejudice future results, nor is it a guarantee of future returns**

Performances

CUMULATIVE INDEX PERFORMANCE - GROSS RETURNS (USD) (NOV 2010 – JUN 2019)



In bps



— Annualized outperformance (2010-2019):

- World: +31 bp ⁽¹⁾
- North America: +36 bp
- Europe: +32 bp

— Even if supposed to be forward-looking

— Performance of concrete investments :

- Nov 2014 – Jun 2019
- Annualized outperformance: +24 ⁽²⁾ bp
- Information ratio⁽³⁾ : 0.56

Past market trends are not a reliable indicator of future ones. Past performance does not prejudice future results, nor is it a guarantee of future returns. Source: MSCI (1) Net monthly returns annualized in USD for the 11/30/2010 to 06/28/2019 period. Data prior to the launch date (Sep 16, 2014) is back-tested data (2) Net weekly returns annualized in USD for the 11/07/2014 to 06/28/2019 period. Outperformance in basis points. The cumulative index performance is from MSCI (3) A ratio of portfolio returns above the returns of a benchmark (usually an index) to the volatility of those returns

Amundi participating to thought leadership

Financial Analysts Journal
Volume 72 • Number 2
©2016 CFA Institute



PERSPECTIVES

Hedging Climate Risk

Mats Andersson, Patrick Bolton, and Frédéric Samama

We present a simple dynamic model without sacrificing financial return. A low-carbon index with 50% index, investors in effect are hedging the low-carbon index emissions are priced, or expected.

Whether or not one agrees with the consensus on climate risk and climate change, the risk is worth hedging. The evidence that average temperatures have been rising, especially in light of the global warming over 1998–2012, has confirmed the beliefs of doubters and fueled a debate widely covered by the media. The debate is stimulated by three important factors. The first and most obvious is that not all countries and industries are equally affected by climate change. As in other policy areas, the winners and losers are different. The second factor is the political issue. Politicians often down the road rather than intrude on the short run and risk situations—all the more so if the

Mats Andersson is CEO of AP4. Bolton is the Barbara and David of Business at Columbia University. Frédéric Samama is deputy global clients at Amundi Asset Manager.

Editor's note: The views expressed by the authors and do not represent the views of the Amundi Group, AP4.

Editor's note: This article was reviewed by Executive Editor Stephen J. J. Editor Robert Litterman.

Governance and Climate Change: A Success Story in Mobilizing Investor Support for Corporate Responses to Climate Change

by Mats Andersson, AP4, Patrick Bolton, Columbia University, and Frédéric Samama, Amundi and SWF RI

Effective action in limiting the extent and effects of climate change will have to include business and massive investment in the sector in making the energy transition to clean energy and the development of economy.¹ Until fairly recently, the main approach to respond to climate change has been down efforts to regulate emissions and enact a "carbon pricing." The advantage of this approach is that it is based on sound economic logic. The idea is to reach an international agreement on carbon pricing that aims to make businesses the costs associated with greenhouse gas (GHG) and fairly allocate GHG abatement costs across governments will set the environmental protection companies in their respective countries, and adjust to the new regulations and carbon prices of course, is the approach to economic policy. Political pressure and government administration and businesses respond by managing their operations under the rules imposed on them by.

Nevertheless, as the intergovernmental agreement following the signing of the Kyoto Protocol in 1997 demonstrated, this classical approach to economic policy does not work when applied to a global "public goods" climate change mitigation. Given the notorious free-rider problem, international trade agreements even a subset of countries, it should not have been too surprising that there would be little progress toward a global climate agreement among 196 countries. Indeed, by negotiations around the Paris climate agreement starting, the coalition of willing nations had shrank to a handful, mostly in Europe. Given the remarkable that COP21 in Paris managed to bring all nations back into the climate change mitigation

This achievement can be attributed to a complete change of focus in business and investment.

CLIMATE CHANGE: A POLICY MAKING CASE STUDY OF CAPITAL MARKETS' MOBILIZATION FOR PUBLIC GOOD

By Jean Boissinot (Direction générale du Trésor, Louis Bachelier Fellow) and Frédéric Samama (Amundi, SWF Research Initiative)

¹ We are grateful to Dan O'Neil for his comments and detailed paper. We also thank Pascal Bouchard, Jean Bouchard, Paul Dorian, Stéphane Gervais, Laurent Pélissier, Olivier Pélissier, Thomas Pélissier, Matthieu Pélissier, Patrick Pélissier, Robert Litterman, Olivier Rousseau, Laurence Tassin, and Frédéric Samama. We are grateful to Frédéric Samama for his comments. The views expressed in this paper are those of the authors and do not necessarily reflect the position of the Amundi Group and its subsidiaries. The opinions of Amundi are those of Amundi and do not represent the views of Amundi. The governments are not going to do so in the near future.

ACADEMIC PAPERS WITH KEY ACTORS

Financial Analysts Journal (2016)

"Hedging climate risk"

Co-written with AP4 and Columbia University

Journal of Applied Corporate Finance (2016)

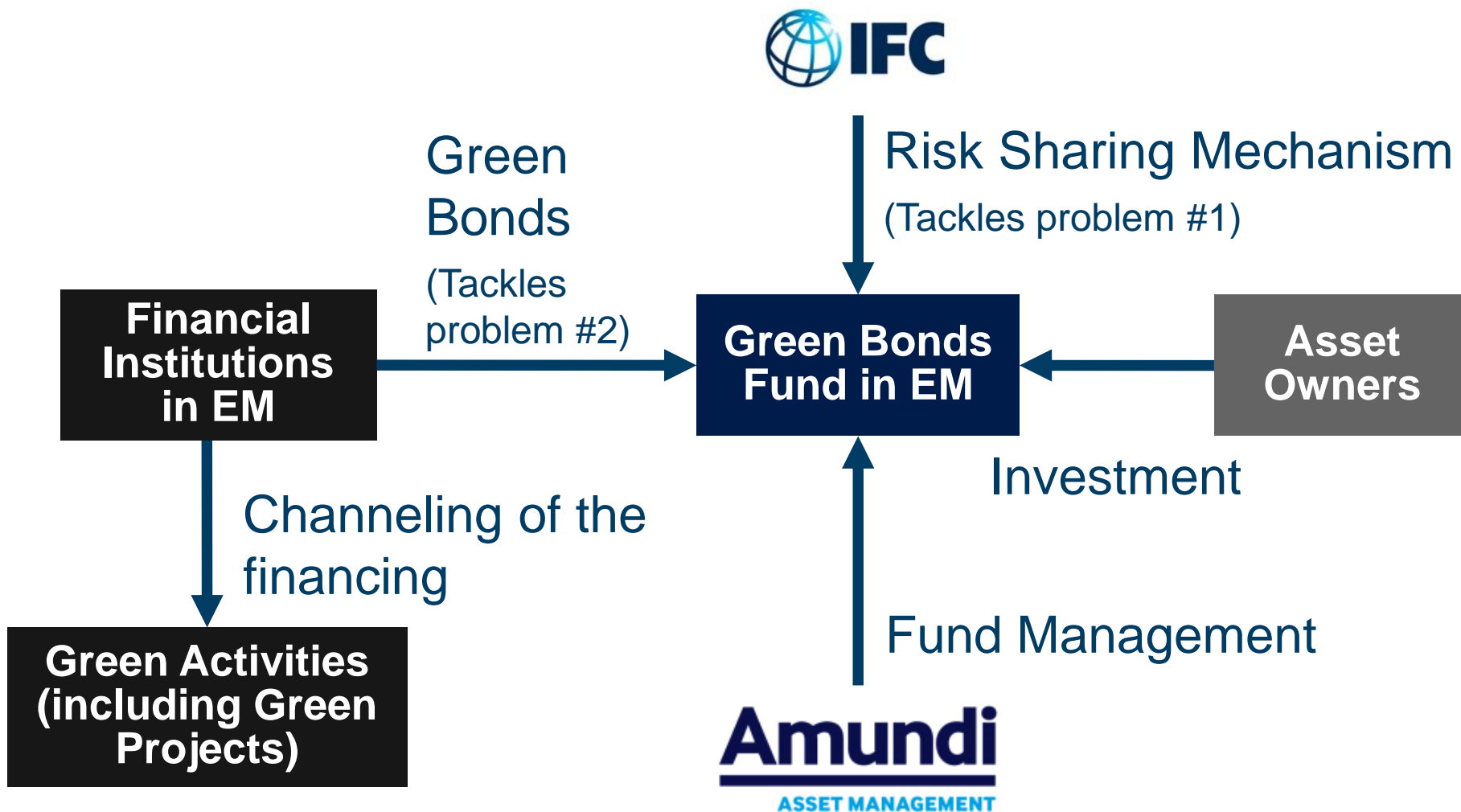
"Governance and Climate Change: a Success Story in Mobilizing Investor Support for Corporate responses to Climate Change"

Co-Written with AP4 and Columbia University

Highlighted in the May-June 2019 issue of the Harvard Business Review

For professional investors only.

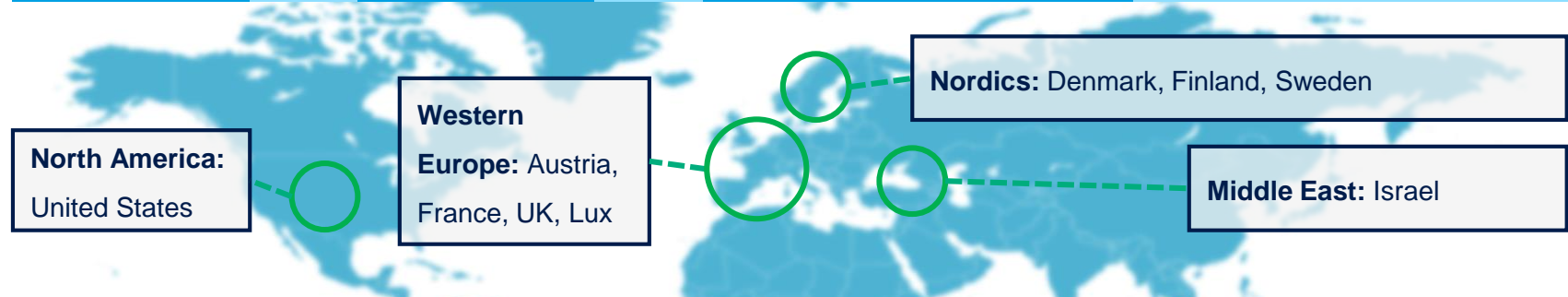
Green Infrastructures Financing Gap: Elegant Solution



Amundi Planet, Emerging Green One: a \$1.42bn Fund

77% of capital was leveraged from the private sector

Investors	16	Orders	42	Average size	USD70mn
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A European investor base with diverse investor backgrounds



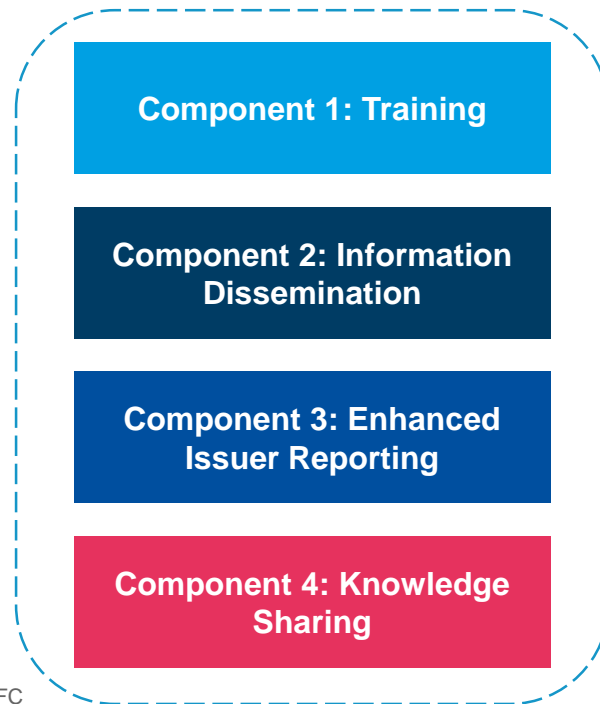
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IFC Green Bond Technical Assistance Program (GB TAP)



THE GOVERNMENT
OF THE GRAND DUCHY OF LUXEMBOURG
Ministry of Finance

- The GB-TAP intends to accelerate the growth of the green bond asset class in emerging markets through **four components**:



Source: IFC

- Each component has its **objectives**:
 - **Training**: dedicated programs targeting EM bankers and potentially other key stakeholders
 - **Information dissemination**: Embed and promote good standards of green bond second opinions and annual impact reporting
 - **Enhanced issuer reporting**: Provide transaction support by assisting FIIs active in EMs to support ex-ante second opinions and ex-post annual impact
 - **Knowledge sharing**: Organize a series of knowledge sharing events, globally, regionally and possibly locally

High Recognition

From partnership inception to fund launch

Partnership launch

FINANCIAL TIMES

IFC invests \$325m in green bond fund for emerging markets

Arm of World Bank to support environmentally friendly projects in developing markets



World Bank's IFC, Amundi to create \$2 billion green bond fund

Fund closing

FINANCIAL TIMES

Green investing generates returns, not just a warm glow

Sustainability is now seen as a way of looking at often ignored externalities

GILLIAN TETT

+ Add to myFT



ASSET MANAGEMENT

Amundi and World Bank close largest green bond fund at \$1.4bn



G20 Report

Presented by **X. Musca**, former Head of the French Treasury and President Sarkozy Chief of Staff.

Making the case of the IFC deal being a case study of a new business model for developing banks

Already won 6 Awards

AP EGO won several awards



- ✓ Real World Impact Initiative of the Year (September 2019)



- ✓ Environmental & Social Innovation (March 2019)



- ✓ Green bond fund of the year
- ✓ Initiative of the Year for Innovative Thinking (April 2019)



- ✓ Green finance collaboration 2018 (March 2019)

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The “Low carbon” indices of the open-ended funds strategy do not have as an objective to exclude all companies emitting carbon but rather to reduce the representativeness of the latter compared to the composition of the parent index. Each strategy index will maintain a sectorial and geographic composition similar to its parent index. Their construction is realized in an objective of performance, tightly correlated to those of the parent indices. Hence, the deviation of geographic and sectorial weights of the strategy index compared to the parent index is limited to 2%.

The information contained in this document is deemed accurate as of Dec. 2017. Data, opinions and estimates may be changed without notice.

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