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Confidence  
must be earned

**Amundi**  
ASSET MANAGEMENT

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April 2019

Solely for the attention of "professional" investors as defined by  
the European Directive 2014/65/UE of 15<sup>th</sup> May 2014

# A Responsible AM's Journey on Climate Change

Timothée Jaulin, Mexico, CCFV Finanzas Sostenables MX 2019

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# Executive Summary

## MULTIPLE FORCES ON CLIMATE CHANGE

- **Climate change is now recognized as the risk #1**
- **Multiple forces to tackle the problem:**
  - COP21 as a game changer
  - Multiple forms of regulation
- **Investors are facing a major shift:**
  - Risk Management approach
  - Increasing number of simple and transparent investment solutions

## AMUNDI PLAYS A PIVOTAL ROLE IN THIS FIELD

- **Innovative off-the-shelf solutions:**
  - ...on all asset classes: debt, equity, real-assets
  - ...through innovative approaches <sup>1</sup> : Joint Ventures, Public & Private partnerships, thematic strategies ...
- **Bespoke solutions to integrate investors' specificities and constraints**
- **EUR50bn AUM in green assets**

(1) Co-founder of the Portfolio Decarbonization Coalition, one of the first signatories of the *UNPRI*, Member of the *Institutional Investors' Group on Climate Change* (IIGCC) since 2003, signatory of the *Carbon Disclosure Project* and *Water Disclosure Project*. Co-Developer of the first Low carbon indices (see MSCI disclaimer at end of document), joint-venture with EDF and thematic funds.

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# 01

## Carbon Risks: Building of a Strong Investment Narrative

*Investors' Mobilization around the COP21*

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# A Tipping Point

## BEFORE 3 to 5 years ago

- 1 Deniers
- 2 One of many risks
- 3 Limited regulations
- 4 No global agreement
- 5 China blocking
- 6 Limited interest within populations
- 7 Economics only
- 8 « Abstract » topic
- 9 Cost of renewables
- 10 Few European investors

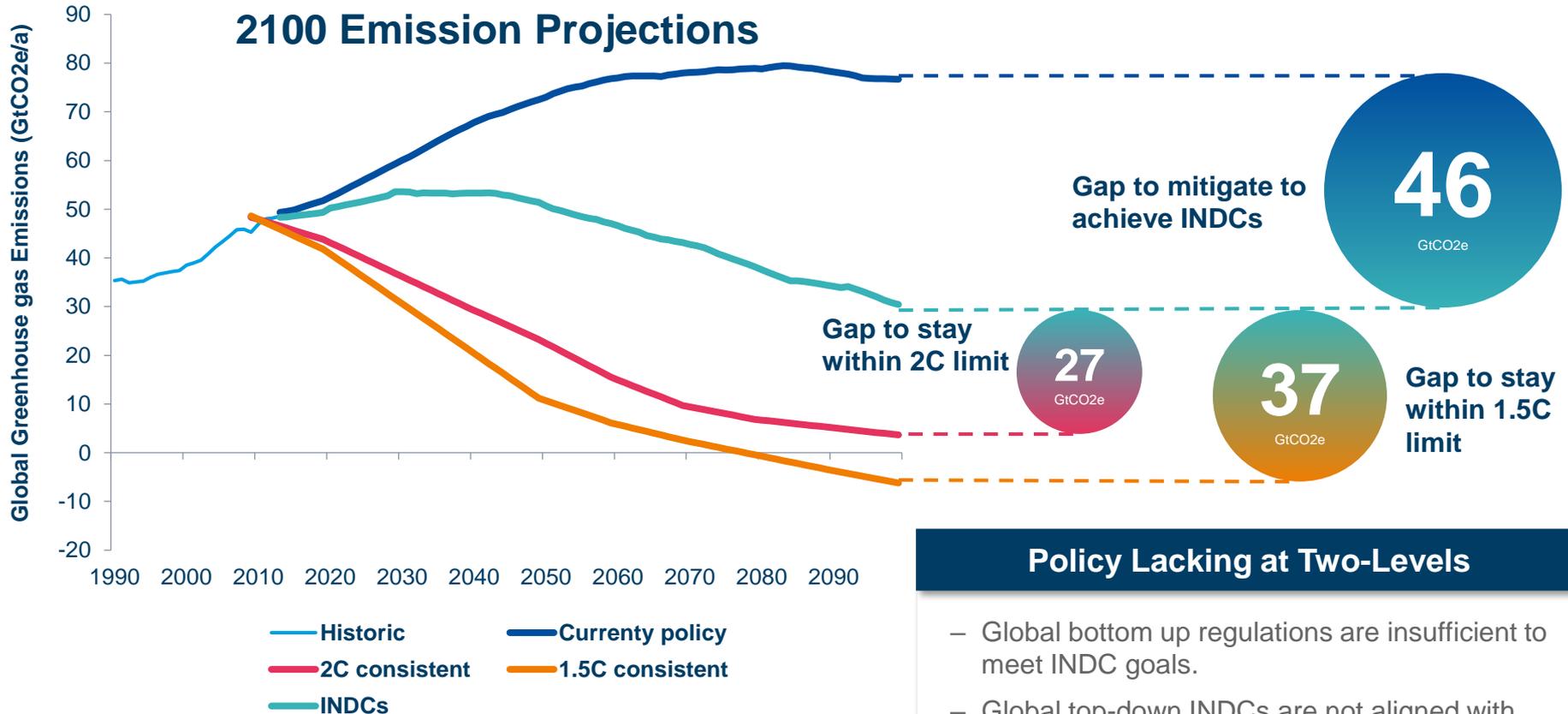


## TODAY

- 1 Acceptance of climate change
- 2 Biggest risk
- 3 Multiple regulations
- 4 COP 21
- 5 China leading
- 6 Millennials
- 7 Impacts on health
- 8 Observations in day to day lives
- 9 Competitive pricing
- 10 Major world investors

# Unprecedented Challenge

Global emission gaps



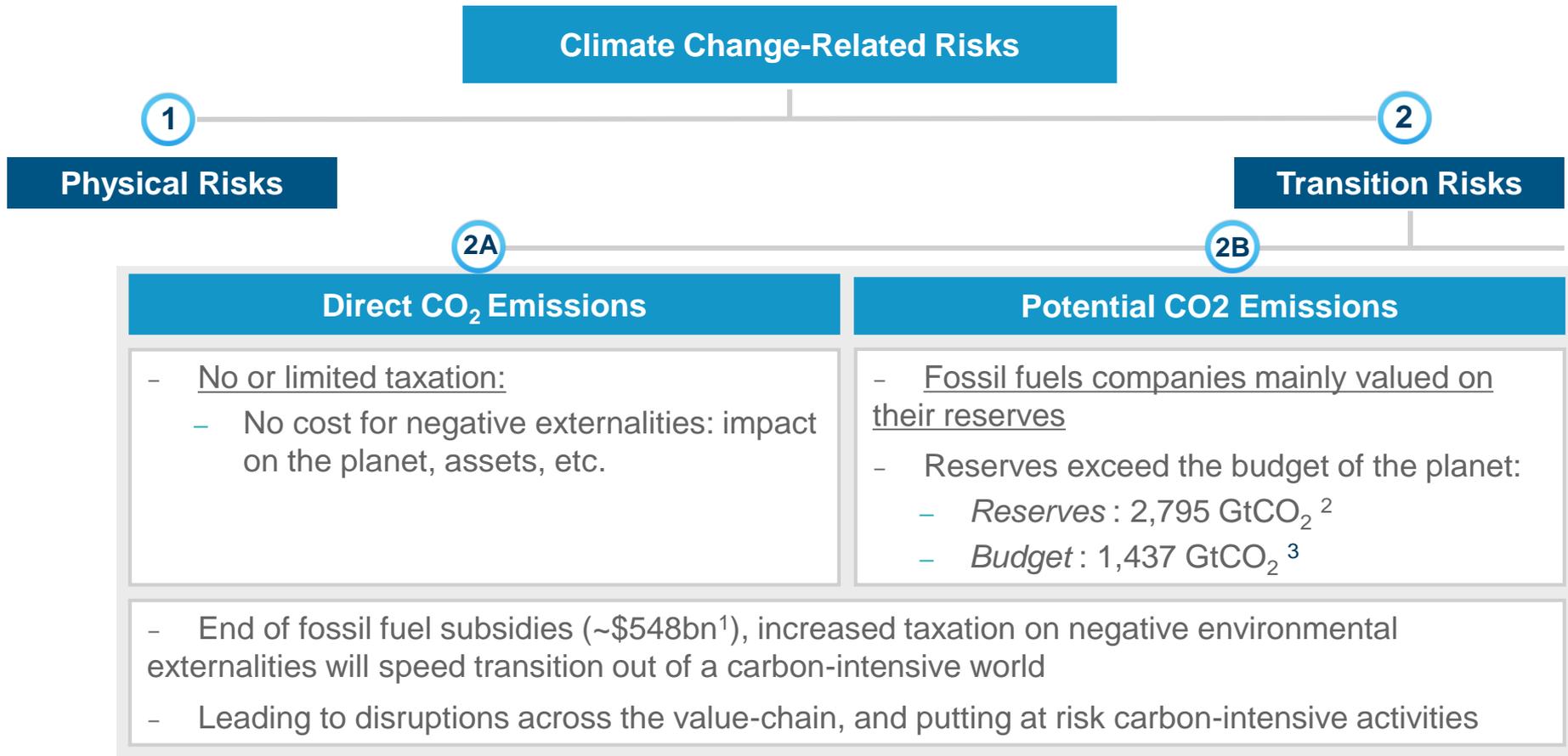
**Policy Lacking at Two-Levels**

- Global bottom up regulations are insufficient to meet INDC goals.
- Global top-down INDCs are not aligned with the Paris Agreement goal.

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.

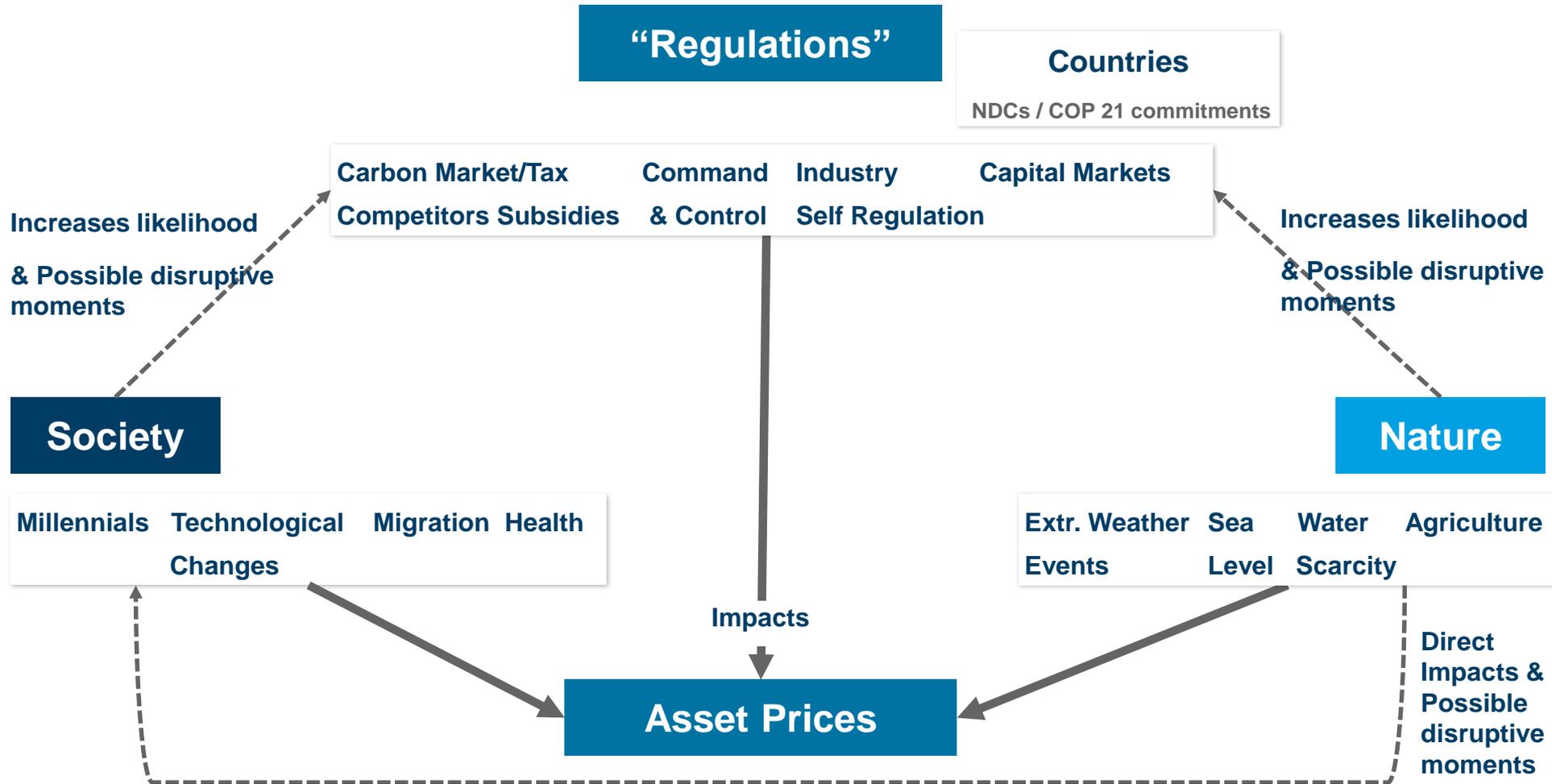
# The Most Important ESG Factor?

From physical risk to transition risk: the carbon risk factor



(1) "Energy Subsidy Reform: Lessons and Implications", IMF (2013). (2) Carbon budget 2000-2050 for a 50% probability to stay under 2°C increase over pre-industrial level scenario. Source "Greenhouse-gas emission targets for limiting global warming to 2°C", Meinshausen et al, 2009. (3) For a 50% probability to stay under a 2° increase scenario. Quantity of CO<sub>2</sub> trapped in the world's top 200 fossil fuel reserves, excluding unconventional sources. Source: Carbon Tracker Initiative

# Multiple Forces Related to Climate Change Impacting Asset Prices



# Stranded Asset Risk: The Carbon Budget Concept

Fig.1: Remaining Ultimately Recoverable Resources

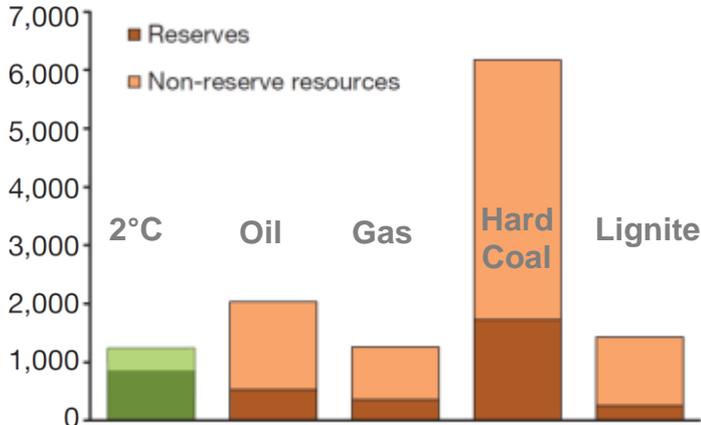
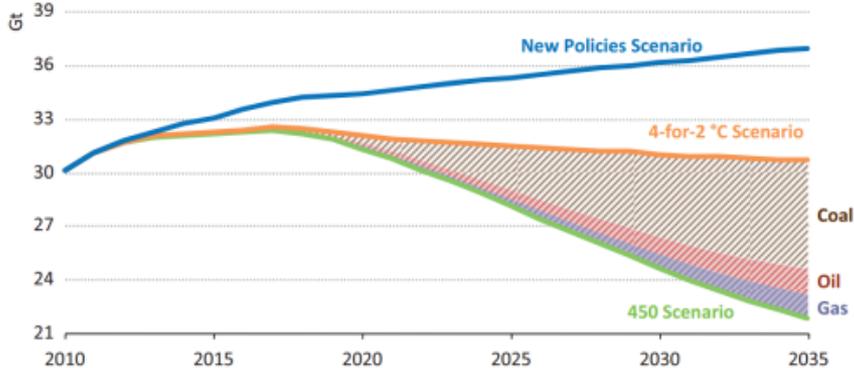


Fig. 2: World Energy-related CO<sub>2</sub> Emissions by Scenario



## – The Carbon Budget Gap:

- Budget for 2011-2050: **1,100 GtCO<sub>2</sub>**
- Proven fossil fuel reserves: **2,900 GtCO<sub>2</sub>e**
- Estimated fossil fuel reserves: **11,000 GtCO<sub>2</sub>e**

## – Low-demand Low-price 450ppm Scenario:

- A 450ppm scenario requires **energy-efficiency measures**
- Lowering fossil fuel demand, **depressing prices**
- Impacting marginal producers: deep water, oil sands, shale oil, thermal coal
- And resource owning countries:
  - Middle East (owns half of stranded assets)
  - Canada (very low utilization rate)

Source graphs: IEA 2013, Redrawing the Energy-Climate Map. (1) Nature, January 2015. (2) Nature, April 2009

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# Stranded Asset Risk: The US Coal Crash

Asset Value Depends on Production Costs and Market Price



Climate Policy Initiative, 2014, « Moving to a Low-Carbon Economy: The Impact of Policy Pathways on Fossil Fuel Asset Values »

- **US Coal crisis has been caused by shrinking demand**
- With a combination of **3 factors in '15-'16**:
  - **Cheap substitute** (gas, wind power)
  - **Regulation**: Clean Air Act
  - **Declining exports** (slowdown in China and strong USD)
- **Creative destruction?**
- In 2016 Natural gas overcame Coal as main energy source to produce electricity
  - Well-known pure play coal companies filed for chapter 11 or chapter 7

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# Assessing Carbon Risk Exposure

Carbon metrics used to proxy carbon risk

**Polluting companies**



*Proxied by CO<sub>2</sub> Emissions Intensity*

$$\frac{\text{Annual CO}_2 \text{ emissions}}{\text{Revenue}}$$

**Stranded Assets**



*Proxied by CO<sub>2</sub> Reserves Intensity*

$$\frac{\text{Potential CO}_2 \text{ emissions from reserves}}{\text{Market capitalization}}$$

# Performances

## CUMULATIVE INDEX PERFORMANCE - GROSS RETURNS (USD) (NOV 2010 – NOV 2018)



## In bps



## — Annualized outperformance (2010-2018):

- World: +30 bp <sup>(1)</sup>
- North America: +33 bp
- Europe: +48 bp

## — Even if supposed to be forward-looking

## — Performance of concrete investments :

- Nov 2014 – Dec 2018
- Outperformance: +25 <sup>(2)</sup> bp
- Information ratio<sup>(3)</sup>: 0.29

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 11/30/2018 period. Data prior to the launch date (Sep 16, 2014) is back-tested data (2) Net daily returns annualized in EUR for the 11/07/2014 to 31/12/2018 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

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# Green Finance: What Investors Really Want?

From ‘talk the talk’ to ‘walk the walk’

- 68% of investors plan to increase their climate-related investment (HSBC Sustainable finance survey<sup>(1)</sup>)
- To do so, investors need investment opportunities that are:
  - 1. ‘Risk and return-driven’**
  - 2. Scalable and cost-effective**
  - 3. A good-fit within their standard investment framework**

(1) Sustainable finance survey 2017, a research commissioned by HSBC and conducted by East & Partners.

# Amundi wide range of Green Solutions

## EQUITY

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

## FIXED INCOME

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

## REAL ASSETS

<p><b>INFRASTRUCTURES</b></p> <p><i>AMUNDI Energy Transition <sup>F</sup></i></p> <p>EDF Joint Venture</p>
<p><b>PRIVATE EQUITY</b></p> <p><i>CEA Joint Venture</i></p> <p>Supernova Invest <sup>F</sup></p>
<p><b>REAL ESTATE <sup>F</sup></b></p>

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

M Mandates  
F Funds

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# 02

## Building Sustainable Markets?

*Two case studies on Green Bonds*

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# Extending Green Bonds to EMs:

## *Amundi-IFC Innovative Green Public-Private Partnership*

### The Challenge

Lack of solutions in emerging markets

- Green bonds have become an effective way to channel capital toward the energy transition.
- Emerging market green bond issuance is growing but still represents a small proportion (22%) of all outstanding green bonds<sup>(4)</sup>
- Potential \$23tn climate-smart investment opportunity in emerging markets between now and 2030<sup>(3)</sup>.

### Combined Expertise

Catalyst for sustainable finance

- IFC: Fostering sustainable finance and creating new market. Mobilizing financial institutions.
- Amundi: Emerging market debt capabilities with an expertise in green finance innovation.



### Meeting Investors Demand

Yield with impact

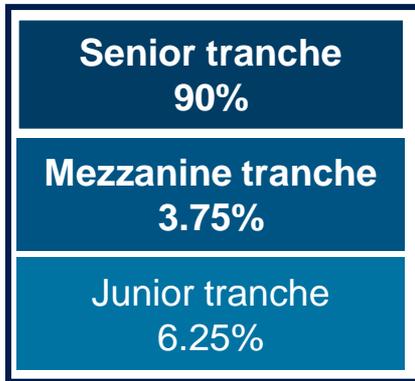
- Yields associated with emerging markets debt.
- Credit enhancement through first-loss absorption mechanism by IFC.
- Diversified exposure at institutional scale.
- Generate impact through green bonds.

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(1) Source IPE "Top 400 asset managers" published in June 2017 and based on AUM as of December 2016 (2) Source Amundi & Pioneer investments pro forma combined figures as of end September 2017. (3) Source: IFC, « Climate Investment Opportunities in Emerging Markets – An IFC Analysis », 2016. (4) Source: Climate Bonds Initiative database as of 14/03/2018/

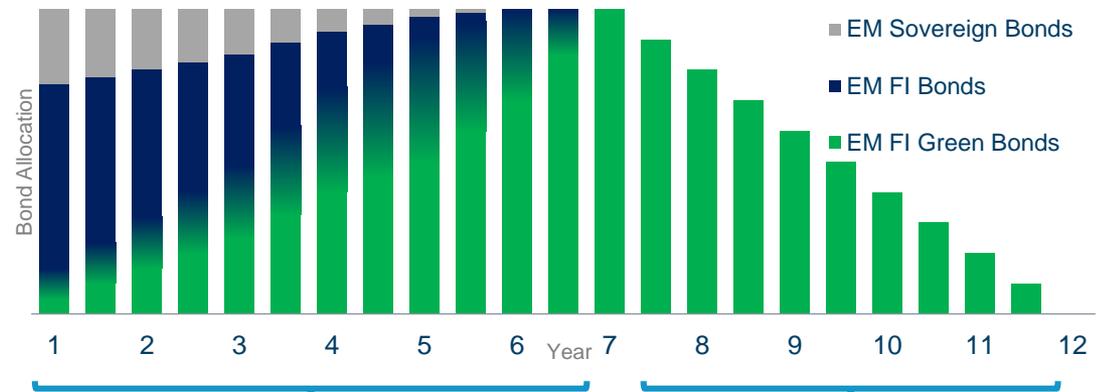
# The Concept: Green Cornerstone Bond Program

## Structure



ptf

## Portfolio



### Pooled vehicle

- Luxembourg Specialized Investment Fund (SIF)
- European AIF
- Shares to be listed
- 12yr legal maturity

### Fin. features:

- EMD Hard Currency
- Portfolio target gross yield > [5.0%]<sup>(1)</sup>
- Indicative rating: [BB+/BB]

### Investment period

- From 100% EM bonds (with systematic ESG screening)
- To target 100% FI green bond<sup>(2)</sup>
- Capture yield premiums
- Finance the energy transition

### Run-off period

- FI green bond portfolio matures
- Other bonds—if any—to be divested<sup>(2)</sup>
- Distributions of proceeds to investors

(1) Projected performance is not indicative of future results and there can be no assurance that any fund or other vehicle managed or advised by any Meridiam fund or any of its affiliates will achieve comparable results. (2) There is no assurance that the portfolio will reach the green bonds investment targets as indicated in the chart above. (2) Within a period of 6 months subject to normal market conditions.

# The Fund: Amundi Planet, Emerging Green One

Structure	CSSF approval	Transferable	Share Types
SICAV-SIF	October 16, 2017	Share classes listed on Euro MTF	Accumulation/ Distribution (USD, EUR)

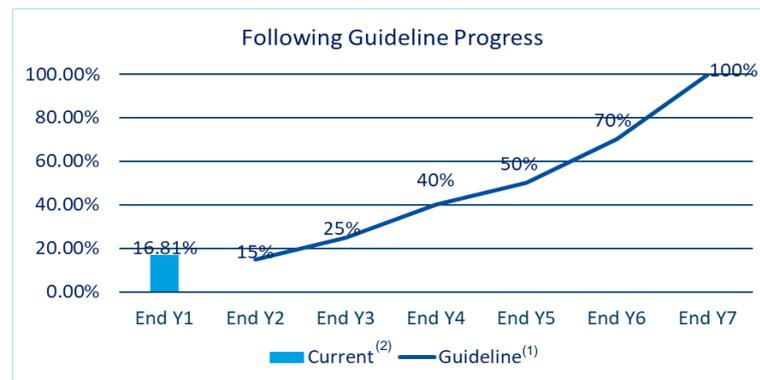
Launch date	February 28th, 2018
First net asset value	March 1st, 2018
Portfolio Ramp up period	Max 90 days

Assets under management at closing (February 28, 2018)	<b>1419.813</b>	<i>Of total...</i>
Senior Shares	(USD mn)	<b>89.996%</b>
Mezzanine Shares	53.272	<b>3.752%</b>
Junior Shares	88.760	<b>6.252%</b>

## Amundi Planet – Emerging Green One’s financial performance is fully in line with expectations<sup>(1)</sup>

Diversified portfolio (111 issuers) with BB+ average rating

- Portfolio yield: 6.59%<sup>(1)</sup>
- Expected Internal Rate of Return for Senior Class Shares (USD) > initial target (~4%)<sup>(1)</sup>



Source: AMUNDI. (1) Projected performance is not indicative of future results and there can be no assurance that any fund or other vehicle managed or advised by any Amundi fund or any of its affiliates will achieve comparable results. (2) As of 31/12/2018. The past performance of investments does not prejudice future returns.

# AP EGO's ESG Policy

## Demanding Development Finance Institutions



- Development focus with varying priorities.
- All aware of best practices in green bond issuances.
- Far reaching requirements originating from usual practices in project finance.

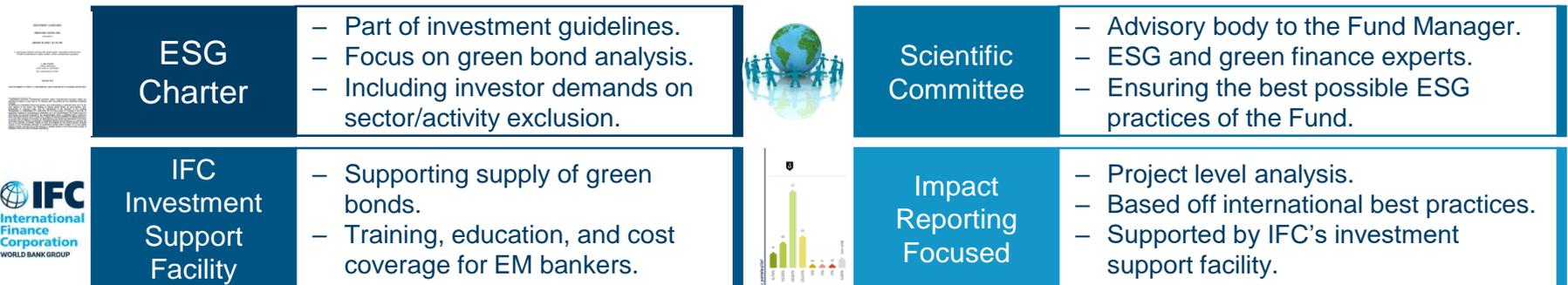


## Amundi Expertise and Capabilities



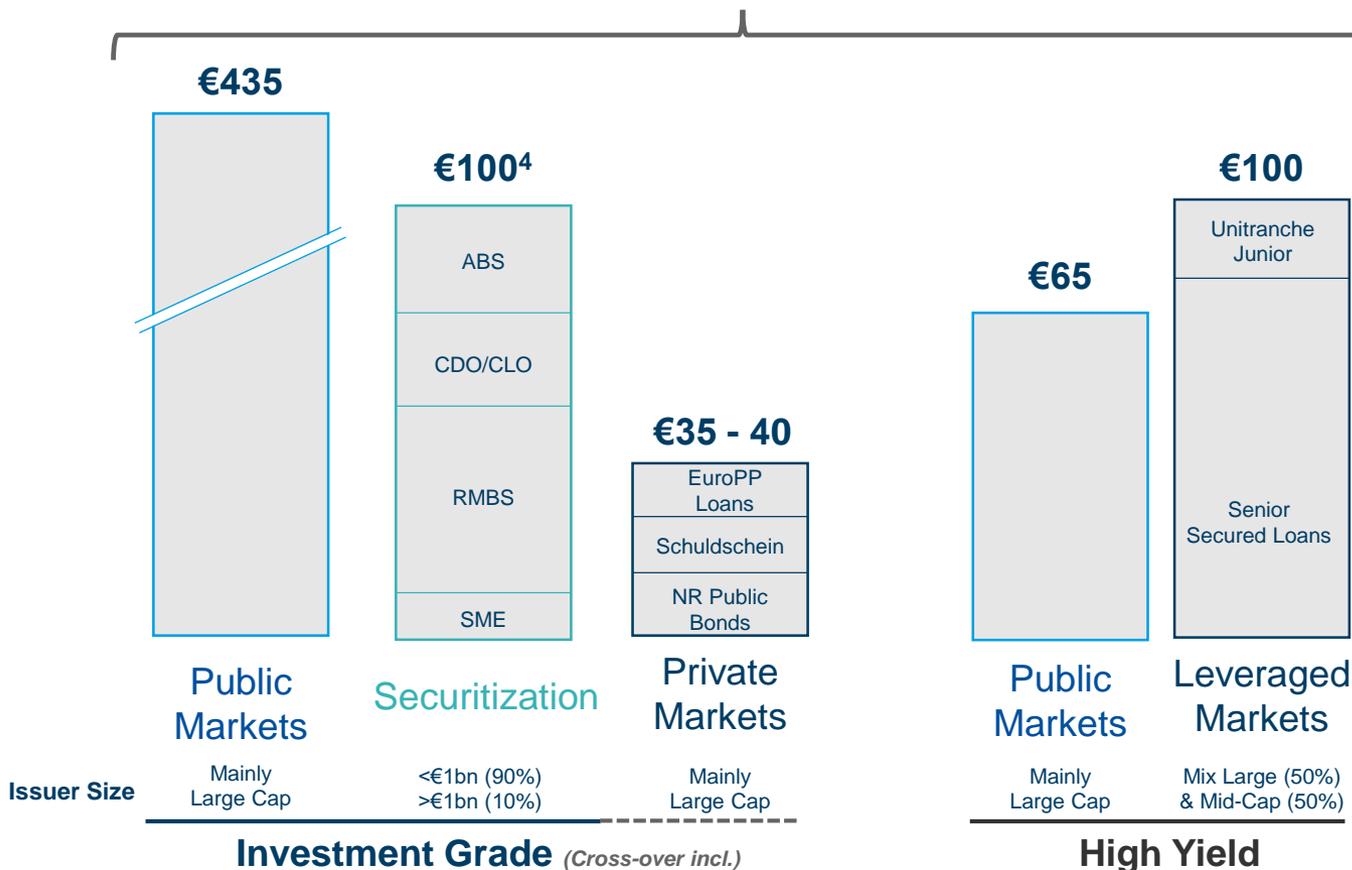
- Robust ESG Methodology at issuer level.
- Best practice capabilities in analyzing public market green bonds.
- Supportive of developing best impact reporting practices.

## An ESG Framework resting on four pillars



# Extending Green Bonds across Instruments and Segments: Overview of European Primary Markets

European Primary Market in 2018<sup>1</sup>  
(estimated in Bn)



## Euro. GB

Labelled GB issuances<sup>2</sup>:

- 2016: **€14bn**
- 2017: **€31bn**
- 2018: **€34bn**

=> Increasing diversity but still mostly senior unsecured IG bonds.

EU 2030 Climate Objectives<sup>3</sup> : **€179bn p.a.**

- **€168bn** in energy efficiency (buildings, industry, transport)
- **€2bn** in grids
- **€9bn** in power generation

Note: European primary market defined as corporate issuances in Euro.

(1) Sources: Amundi, Morgan Stanley, Société Générale CIB, AIFME. (2) Source: Climate Bonds Initiative. (3) Source: Estimates from European Commission. (4) €235Bn taking into account issuers retained primary market

# Rationale per green credit segment

2017 Euro issuances and annual issuance potential

## HIGH YIELD

Outstanding:<sup>1</sup>  
c.€5bn

- Many manufacturing and industrial champions are pure play companies issuing HY bonds
- **Convincing HY issuers to enter the green bond market can have a direct impact on the green transformation of the sectors where HY issuers are active**
- The fund impact (lead order) to make a new issue happen is higher than for IG market due to the smaller nominal amount companies tend to raise



## PRIVATE DEBT

Outstanding:<sup>1</sup>  
c.€2bn

- **Unique entry point to non listed companies**
- Enable to reach out to **many pure-play and mid-cap companies**
- Given their smaller size, mid-cap companies have to deal with a narrower range of financing options



## SECURITIZED CREDIT

Outstanding:<sup>1</sup>  
c.€4bn

- Many low carbon infrastructures such as rooftop solar, small-scale wind, energy efficiency upgrades, electric vehicles and batteries cannot access directly the bond markets
- **Securitizations are designed to provide a security format to real assets and small loans that have no direct access to financial markets but display an important environmental impact (solar panels, energy efficiency refurbishments etc.)**
- **CLOs can be an interesting tool to reach out to SMEs**

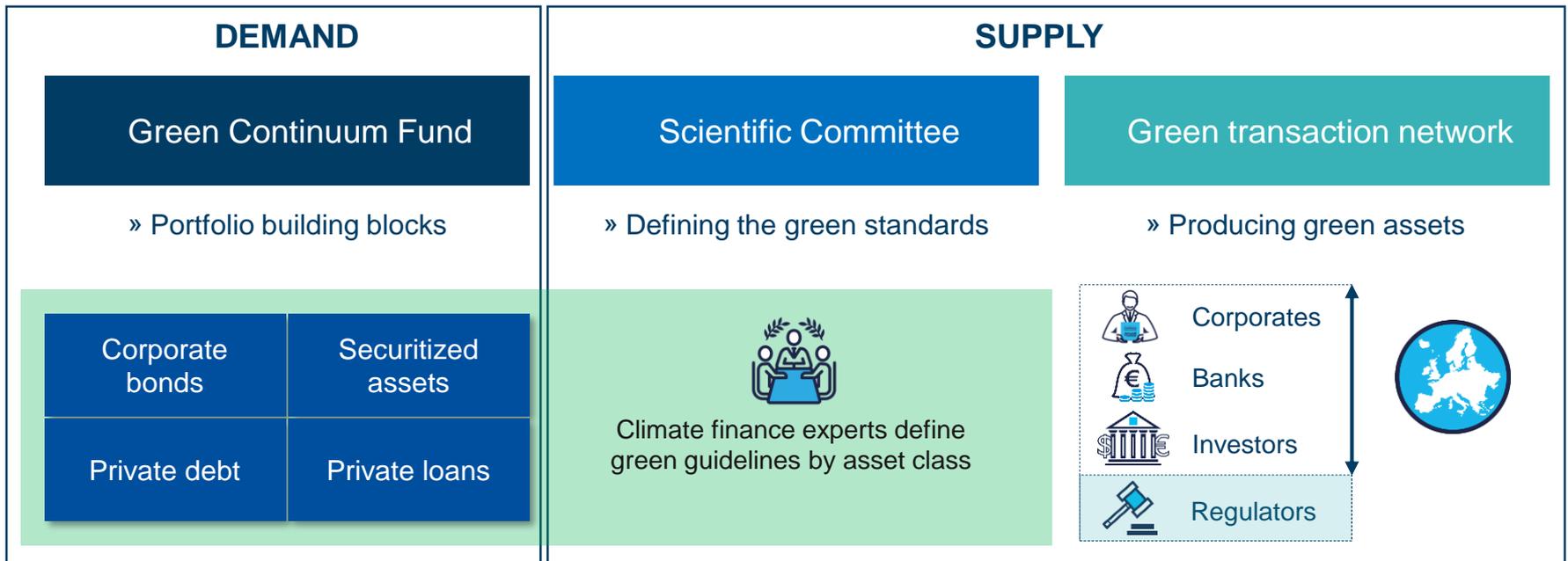


(1) As of November 2018. (2) 2017 Euro IG green credit issuances represented c.7% of total 2017 Euro credit IG issuances. Keeping this constant for each market segment yields an estimated potential issuance level for each segment. (3) Securitized credit issuances encompass all European currencies, not only Euro. Sources: AFME, Bloomberg, Climate Bonds Initiative, Amundi analysis

# Overview of the Green Credit Continuum

A comprehensive program to expand the European green credit market

Supporting jointly demand and supply to expand the green credit spectrum



## An ESG Charter to support standardization

Tailored for each segment

Acting as a market reference

In line with EU's Sustainability Taxonomy

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