



**Fossil fuels assets'
exposure to carbon policy:
Will stranding risk
increase in a post COP21
agreement world?**

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1st AIEE Energy Symposium
November 30 -December 2, 2016
University Bicocca, Milan

The Paris Agreement: a momentum on climate finance

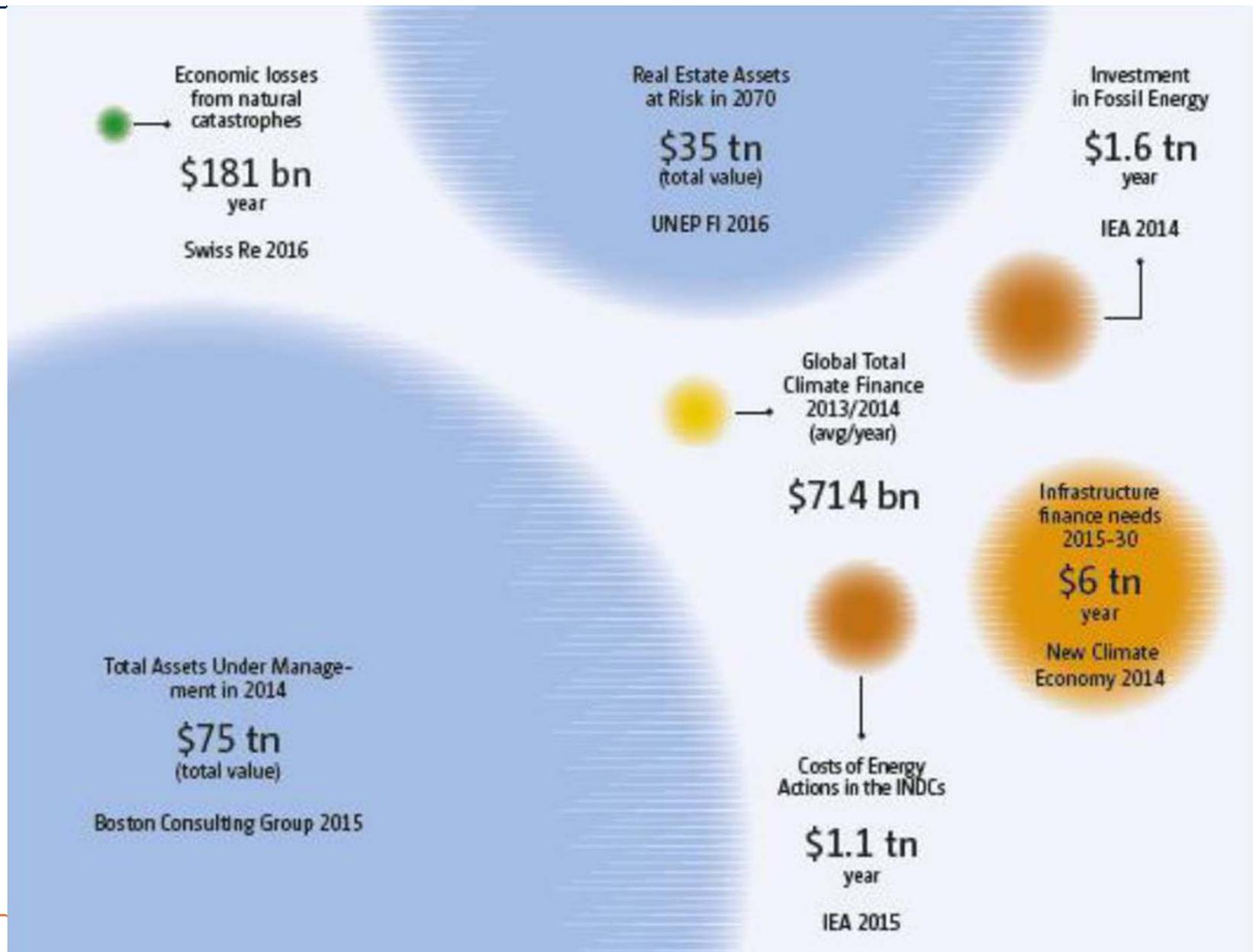
The Paris Agreement represents a significant shift in terms of ambition on climate finance:

- Recognizing that the **long-term temperature goal** should be to “hold [...] the increase in the global average temperature to well below 2C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 C” (Article 2.a)
- Calling for **making finance flows consistent with a pathway towards low greenhouse gas emissions and climate resilience** development (Article 2.c).



INDC: Intended Nationally Determined Contribution

Global Climate Finance in a wider perspective



Types of climate change related risks

Physical climate risks: arise due to changes in the climate system, including climate change induced natural capital depletion and degradation, and changing resources' availability (impacts).

Carbon risks: associated with the transition to a low-carbon economy:

- **Government regulations**, e.g. carbon pricing, disclosure requirements.
- **Energy technology innovation** e.g. energy efficiency, electricity storage, disruptive technologies, falling costs.
- **Evolving social norms** from divestment campaigns to changing consumer preferences and behavior.
- **Legal challenges** associated with liabilities for financing high carbon activities.

Carbon risk across the investment chain

Operator carbon risk

Physical assets: assets that may suffer from unanticipated or premature write downs, devaluations or conversion to liabilities.

Valuation of companies: impairment of physical assets impacts the valuation of companies that own these assets.

Credit risk: impact on the creditworthiness of counterparties.

Carbon asset risk

Financial portfolios: depending on the asset allocation and balance sheet.

Financial system: systemic risk to financial stability, in the agenda of macroprudential authorities.

The carbon budget

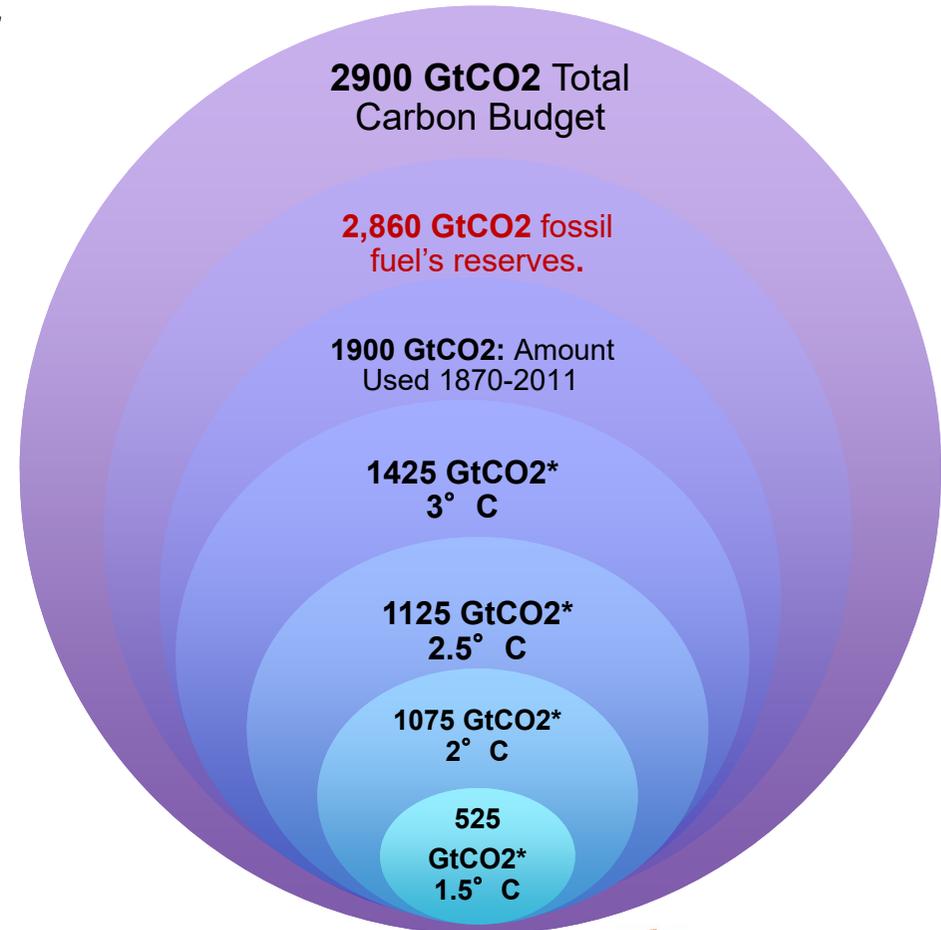
- To meet a 2° C target with 50% probability **35% of oil, 82% of coal and 50% of gas** reserves globally should not be extracted.

Total oil reserves alone are enough for 3° C warming.

- The Middle East holds over half of the unburnable oil globally (260 billions of barrels).
- Canada has the lowest relative utilization of its oil reserves (25%).

Fossil fuel's carbon budget 2013-2049

(*amount required under a 50% probability)



Sources: Ekins (2015), CTI (2013), IPCC (2014).

Carbon budget for listed companies

Top 200 oil, gas and coal mining companies:

- Allocated up to **USD 674 bn (2013)** for finding and developing more reserves:
 - USD 593 billion in oil and gas sector
 - USD 81 billion in coal sector.
- **Spent five times** more on seeking new reserves than they are returning capital to shareholders.
- Up to **USD 6.74 trillion** in capital for developing unburnable reserves **in the next decade.**

Of the 762 GtCO₂ in reserves owned by listed companies, 65-80% cannot be burnt unmitigated.

Carbon Asset Risk (CAR)

Carbon asset risk: potential for an investor to experience financial loss due to unmanaged operator carbon risk

Investors, insurers, asset managers are increasingly asking fossil fuel companies to assess, disclose, and address CAR.

CAR is a function of the type of financial relationship with the operator



Understanding of where different types of financing sit in the capital stack is key



All specific aspects of financing (type of capital, tenor, seniority) affect the risk and return profiles of a financial investment, and determine whether operator carbon risk translates into CAR.

Carbon risk exposure of an investment

Long-term vs. short-term carbon asset risk exposure

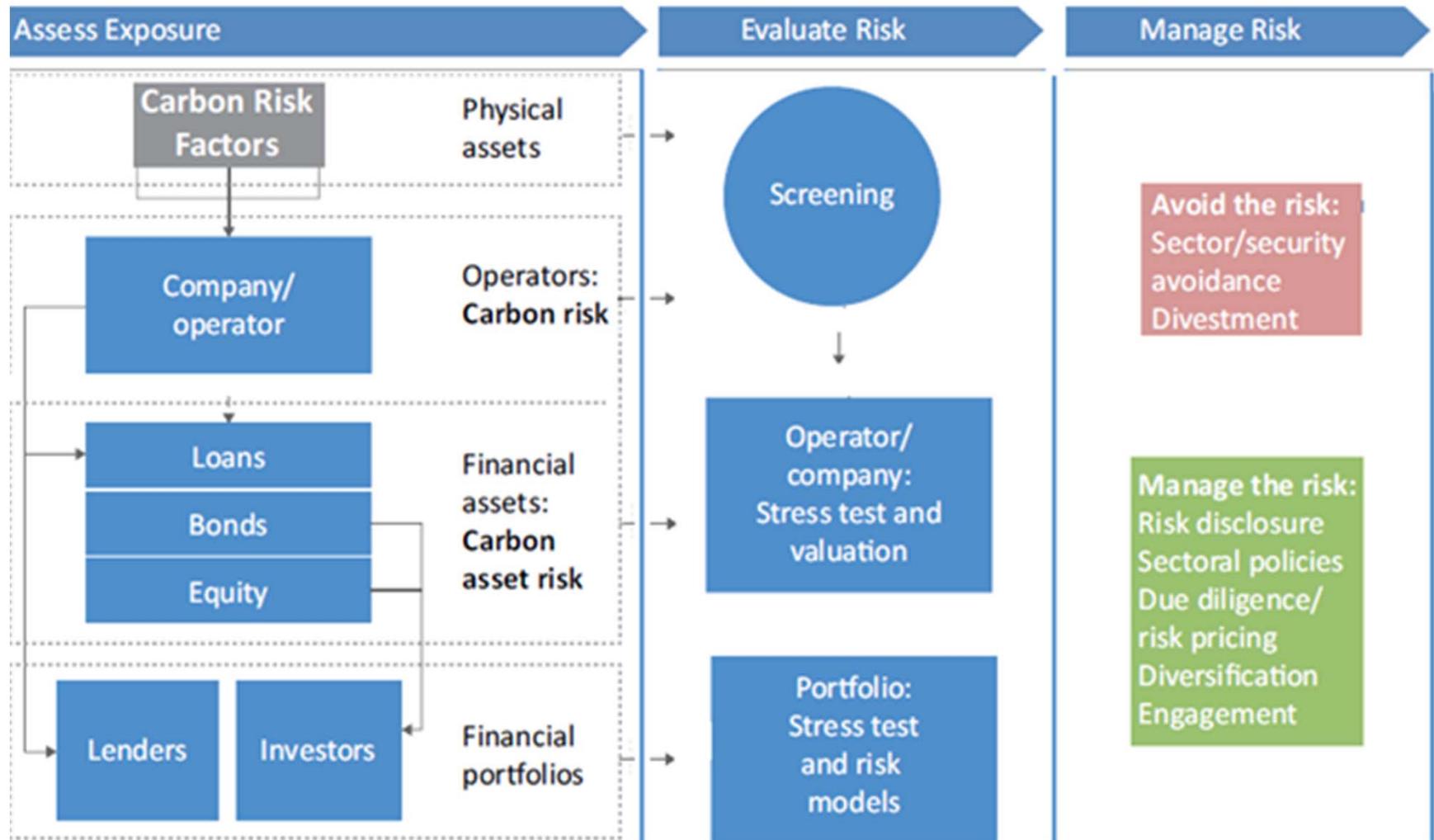
Before, climate regulation were the main stranding risk, and this was perceived as not immediate or urgent. It was a tangible risk for truly longer-term investors such as **insurance companies** and **Sovereign Wealth Funds (SWFs)**.

Today, stranded risks are perceived as **short-term risks**, because of the collapse in energy prices that have led fossil fuel industries to cut capex and made operating assets unprofitable.



This made it more urgent to address stranding risks for investors and lenders, including shorter-term financiers such as **private equity** and **pension funds**.

How to manage the Carbon Asset Risk?



Source: UNEP 2015

How to manage the Carbon Asset Risk? (2)

Risk exposure can be managed by a combination of:

- **Disclosure** of information is a prerequisite for the effectiveness of the assessment, evaluation and management of climate risk.
- **Engagement** with the company to assess and monitor thorough time the risk management approach adopted.
- The returns impacted due to climate change could be hedged by investors through cross-industry and regional **reallocation**.
- **Divestment** strategies.

Disclosure

➤ **Portfolio Decarbonization Coalition**

A multi-stakeholder initiative that will drive GHG emissions reductions by mobilizing a critical mass of **institutional investors** committed to gradually decarbonizing their portfolios: USD 600 bn in assets (as of COP21).

➤ **Montréal Carbon Pledge**

Investors commit themselves to **measuring** and publicly **disclosing** the carbon footprint of their investment portfolios on an annual basis: USD 10 trillion in assets (as of COP21)

➤ **French Energy Transition Law (2015)**

Strengthening **mandatory** climate disclosure requirements for listed companies and financial institutions.

Divestment

The **divestment movement** started in September 2013, when the Carbon Tracker Initiative launched the **Carbon Asset Risk (CAR) Initiative**.

The CAR Initiative was launched as **75 investors representing USD 3.5 trillion in assets** calling on 45 of the world's largest fossil fuel companies to address the physical and financial risk of climate change.

As of September **2015**, institutions and individuals representing **USD 2.6 trillion in assets** have committed themselves to divesting from specific fossil fuel companies, particularly those involved in **coal** and, in some cases, **tar sands**.

Divestment (2)

There are **four approaches** that investors can choose to adopt **to implement a divestment strategy**:

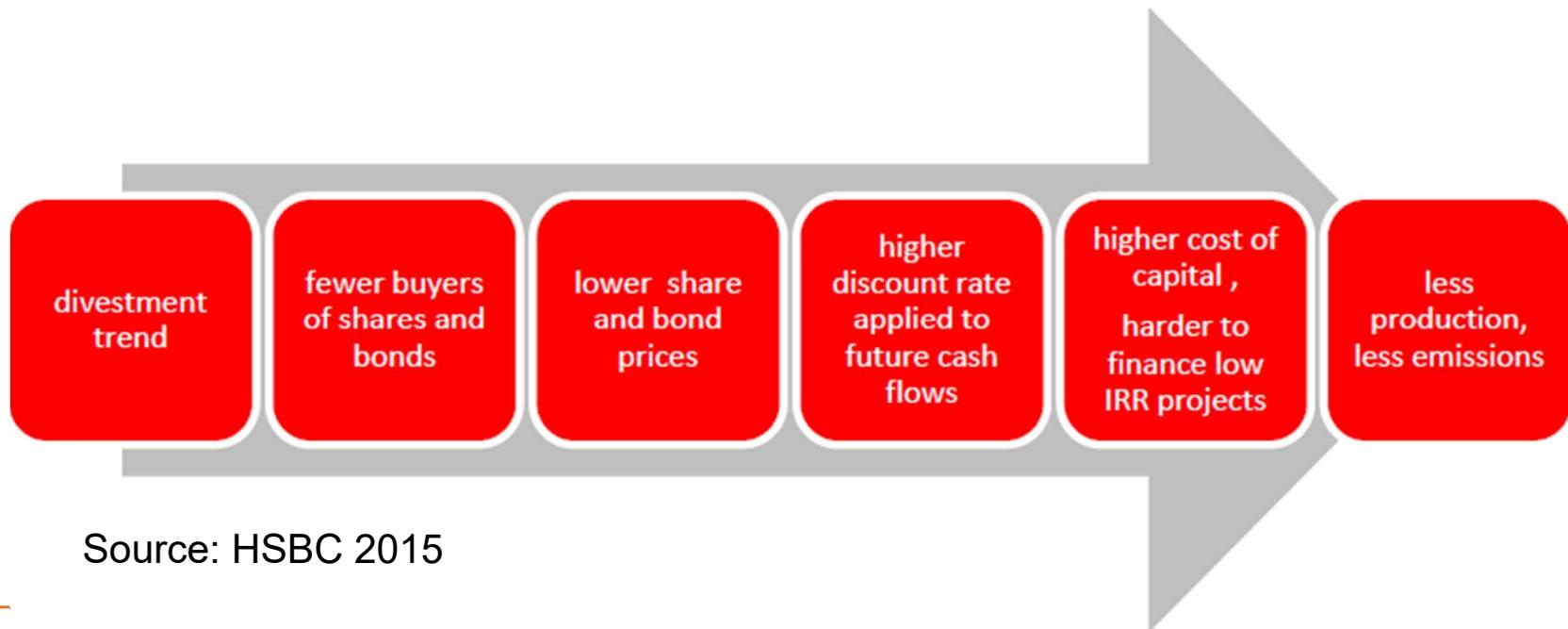
1. **100% divestment** from all fossil fuels companies;
2. **Partial divestment (tilting)** according to index classification, revenue criteria or breakeven prices;
3. **Value chain analysis** of the fossil fuel companies;
4. **Worst-in-class approach** based on carbon intensity of individual companies.

Divestment (3)

Investor	Country	Category	Strategy	Divestment	Date of announcement
Second AP Fund	Sweden	Pension	Partial divestment	12 coal and 8 oil-and-gas companies.	Oct-14
ANU	Australia	College	Partial divestment	Iluka Resources, Independence Group, Newcrest, Sandfire, Oil Search, Santos and Sirius, representing 5.1% of holdings.	Oct-14
Rockefeller Brothers Fund	US	Family fund	Fossil fuels	Initially, coal and tar sands. Ultimately, all fossil fuels.	Sep-14
Storebrand	Norway	Pension	Partial divestment	13 coal extractors and six firms that are heavily exposed to oil sands, later decision to divest from coal-heavy utilities.	Jan-14
Boxtel	Netherlands	Local authority	Partial divestment	200 fossil fuel companies that hold the largest coal, oil, and gas reserves.	Oct-13
Orebro	Norway	Local authority	Fossil fuels	All fossil fuels	Jun-13
Church of Sweden	Sweden	Religious	Fossil fuels	All fossil fuels	Sep-14
The University of Glasgow	UK	College	Partial divestment	Divested £18m from the fossil fuel industry and froze new investments	Oct-14
Green Mountain College	US	College	Partial divestment	200 fossil fuel companies that hold the largest coal, oil, and gas reserves.	May-13
Hampshire College	US	College	Fossil fuels	All fossil fuels	Dec-11
Peralta Colleges	US	College	Partial divestment	200 fossil fuel companies that hold the largest coal, oil, and gas reserves.	Dec-13
Prescott College	US	College	Partial divestment	200 largest fossil fuel corporations over the next 3 years	Feb-14
San Francisco State Univ	US	College	Partial divestment	Coal and tar sands companies, began process to look at fully divesting from the fossil fuel industry	May-13
Sterling College	US	College	Partial divestment	200 fossil fuel companies that hold the largest coal, oil, and gas reserves.	Feb-13
Stanford	US	College	Coal	Coal mining companies	May-14
World Council of Churches	Switzerland	Religious	Fossil fuels	All fossil fuels	Jul-14
The University of Sydney	Australia	College	Carbon	Cut its fossil fuel investments by reducing the carbon footprint of its portfolio by 20% over three years	Feb-15
Oslo	Norway	Local authority	Coal	Coal companies	Mar-15
Nordea	Sweden	Asset Manager	Coal	Up to 40 coal-mining companies	Jan-15
KPL Pension Fund	Norway	Pension	Coal	Companies that derive more than 50 per cent of their revenues from coal	Nov-15
Local Government Super	Australia	Pension	Coal	Companies that make more than a third of their revenues from coal mining or coal-fired electricity generation	Oct-14
Norges Bank IM	Norway	Sovereign Wealth Fund	ESG	22 carbon-intensive fossil fuel companies	Feb-15

Does divestment extend the carbon budget?

In economic terms, divestment leads to less demand for shares and bonds, lower prices and **increases the cost of capital limiting the ability to finance expensive projects**, which is particularly damaging in the energy sector where projects are inherently long term and with riskier IRR.



Source: HSBC 2015

Does divestment extend the carbon budget? (2)

From a carbon budget perspective divestment seems positive because it **extends the time available** to implement policy, invest in low-carbon energy infrastructure and scale up emerging technologies that facilitate a faster transition to a low carbon economy.

Although, some important **challenges** exist:

- **Transition risks:** indirect threats including new regulations, shifting market demand, technological innovation and changing societal expectations;
- **Financing gap:** energy transition need an additional **USD 1 trillion per year in clean energy by 2030.**

How to fill the financing gap for energy transition?

Positive returns are associated with retaining exposure to the **energy sector: reallocating** portfolios **towards low carbon energy** by replacing fossil fuel stocks with energy efficiency and renewable energy investments.

Clean energy investment has grown rapidly in recent years: In 2014 **USD 270 billion** was invested in RES. (In 2013 the world added more low-carbon electricity capacity than fossil fuel capacity).

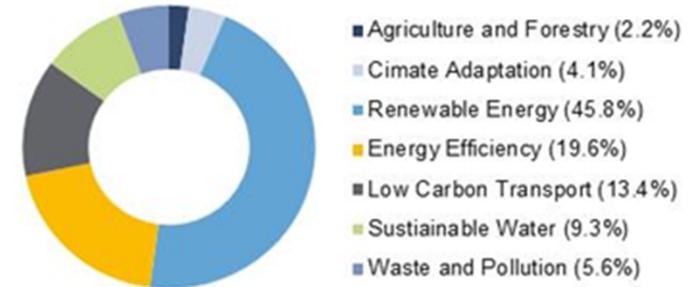
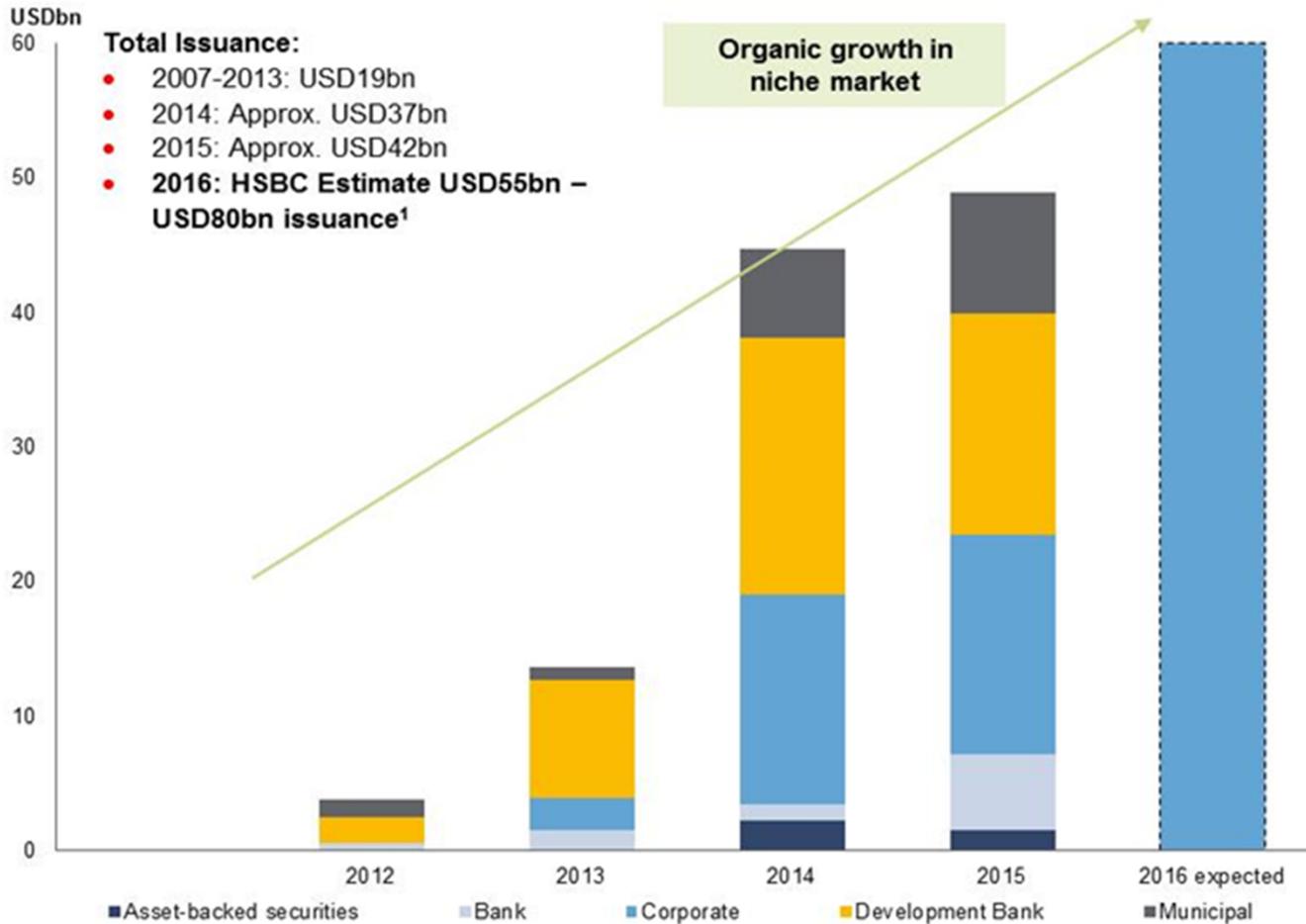
The costs of low-carbon technologies continue to fall, and new financing vehicles are starting to take off: i.e. green bonds.

Green Bonds

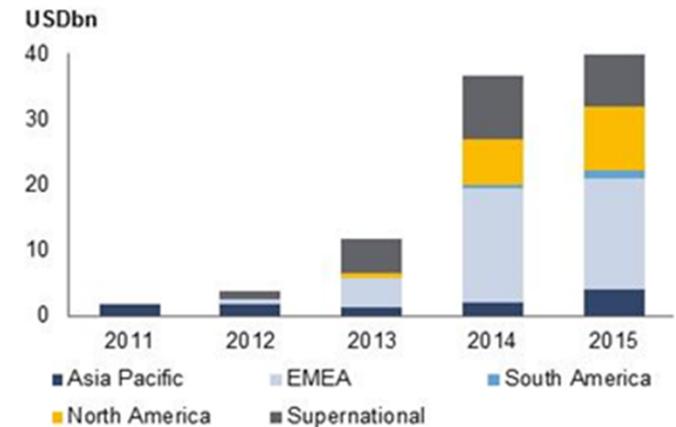
- **Green bonds are labelled bonds specifically issued to finance environmental protection, sustainability or specific climate mitigation and adaptation measures.**
- They can be issued by governments, development banks, commercial banks or corporations.
- The majority of issuances have **tenors over 10 years**, reflecting the long-term nature of climate assets, such as **energy infrastructure bonds**.

Green Bonds (1)

Green bonds finance a range of green projects, with the largest proportion of proceeds going to renewable energy and energy efficiency projects



Global Green Bond Issuances



Note:

1. HSBC Climate Change Centre of Excellence research report. Global Green Bonds, Outlook for 2016:

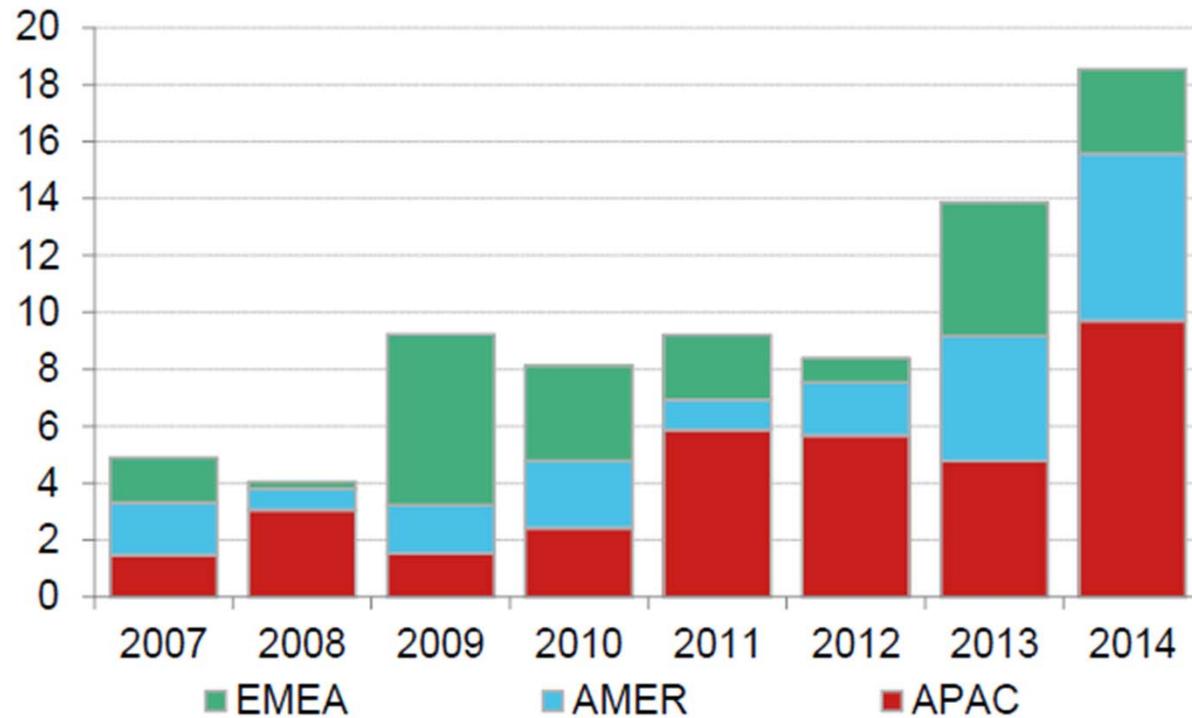
<https://www.research.hsbc.com/R/20/pkkkV/m>

Source: Climate Bonds Initiative 2015 Market Update, <http://www.climatebonds.net/resources/publications/2015-green-bonds-market-update>

Distribution by issuer type and geographic area Source: Climate Bond Initiative (2015)

Green Bonds (2)

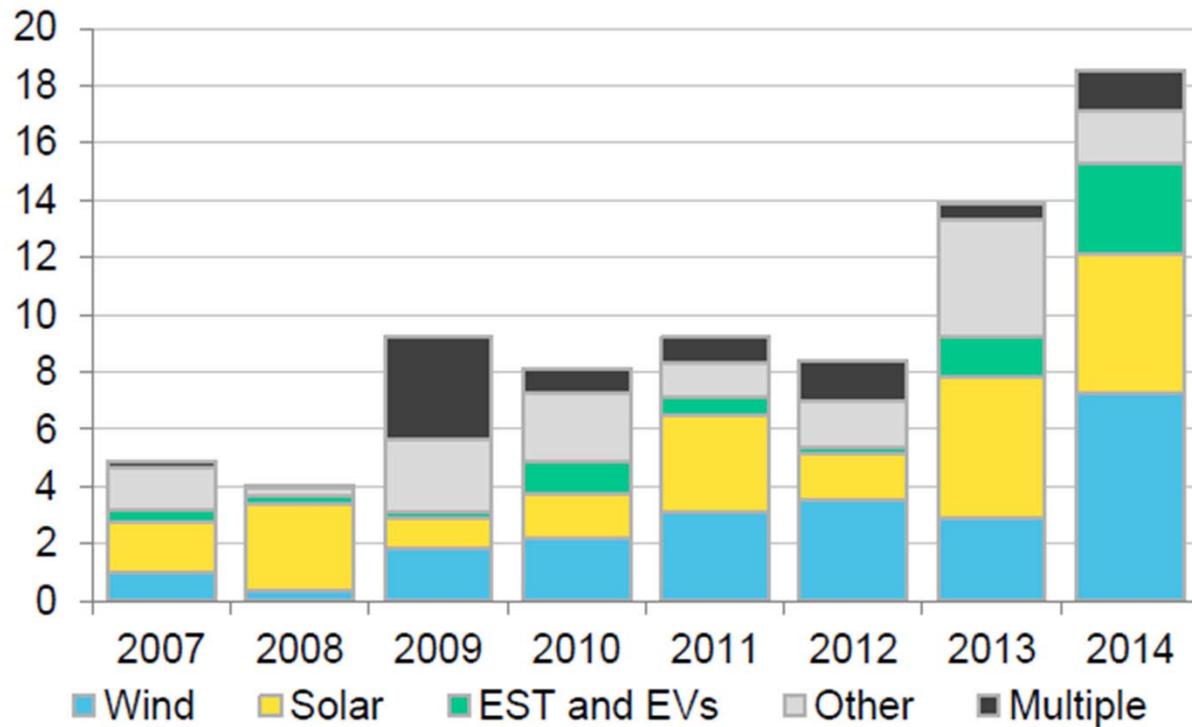
Corporate Bond Issuance by Region



Source: Bloomberg New Energy Finance

Green Bonds (3)

Corporate Bond Issuance by Sector



Source: Bloomberg New Energy Finance

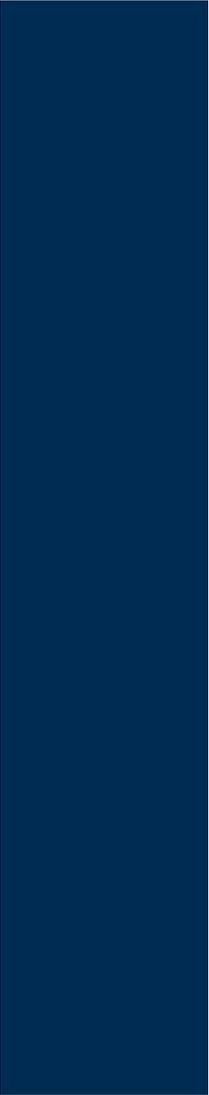
Green Bonds (4)

Green bonds play also a very important role as **refinancing tools**, which is key especially during higher risk construction phase of renewable energy projects, with the aim to ensure investors and developers that once operational the asset can be refinanced through bonds.

Green bonds are looking increasingly attractive to **insurance companies** (e.g. Zurich bought a USD34 million, 30-year fixed-rate green bond issue from the World Bank in February 2015).

Conclusions

- Cooperation between fossil fuel's assets operators and its funders is needed for driving the carbon risk down.
- Investors should require disclosure and identify the operators more exposed to carbon risk.
- Engagement is a good strategy to assess and monitor through time the risk management approach adopted.



Thank you for your attention

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