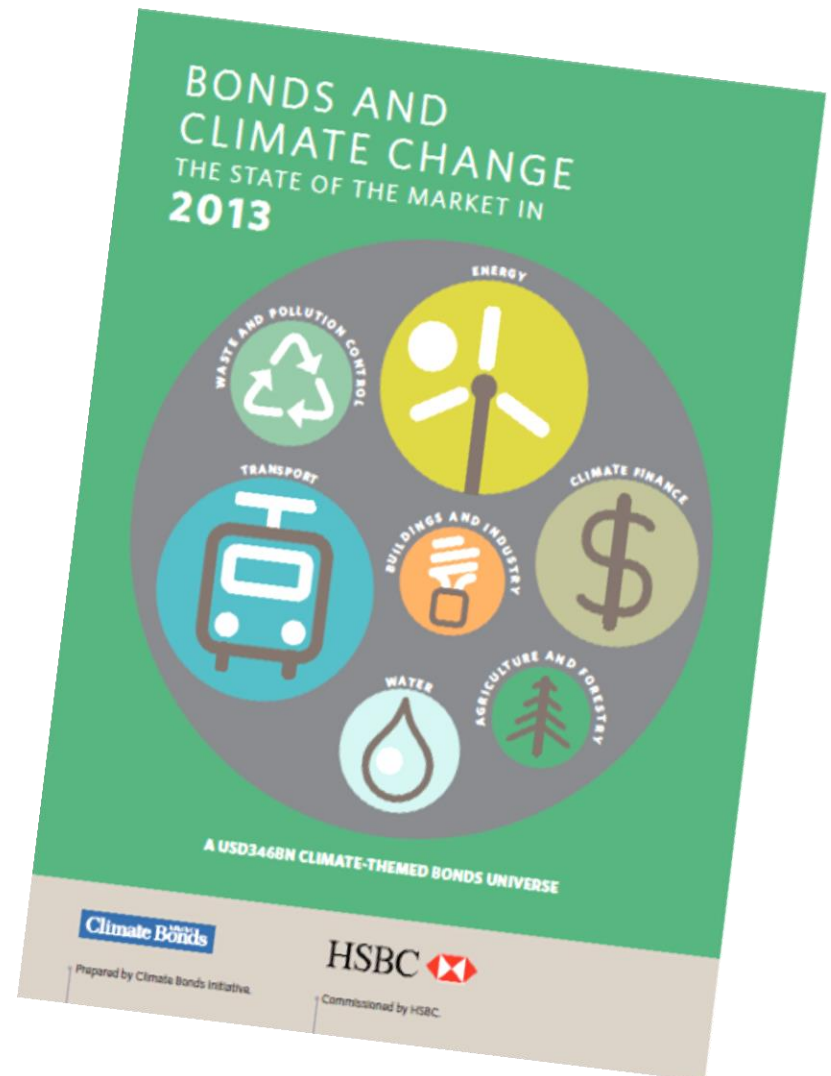


Bonds and Climate Change

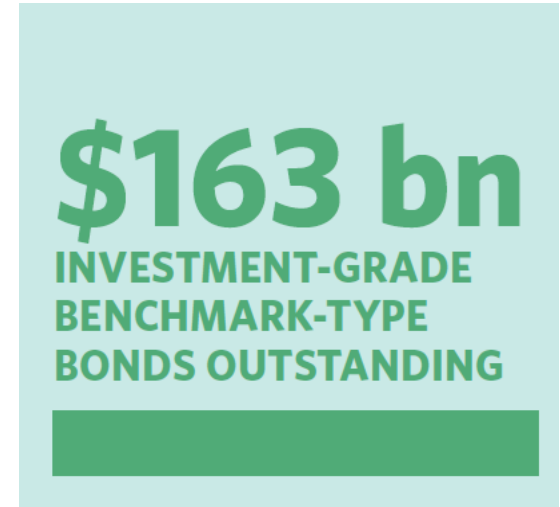
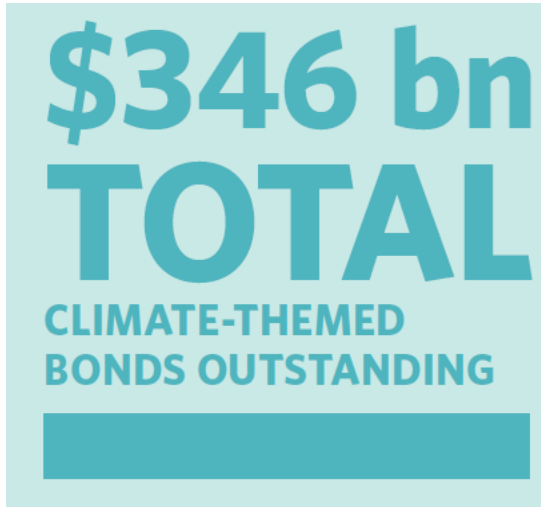
The state of the market in 2013



Context








- HSBC estimates that USD10trn in investment is required between 2010 and 2020 for the low-carbon economy
- Bonds will be critical: the bond market is now worth USD78trn vs. USD53trn for equities, the reverse of a few years ago.
 - Post-crisis realities and regulation will make debt capital markets even more important (Basel III)
- This is the 2nd annual report commissioned by HSBC designed to:
 - Estimate the size, themes and regional breakdown of the climate-themed bond market
 - Identify main developments since the first report in 2012
 - Highlight key themes for the year ahead

Key takeaways

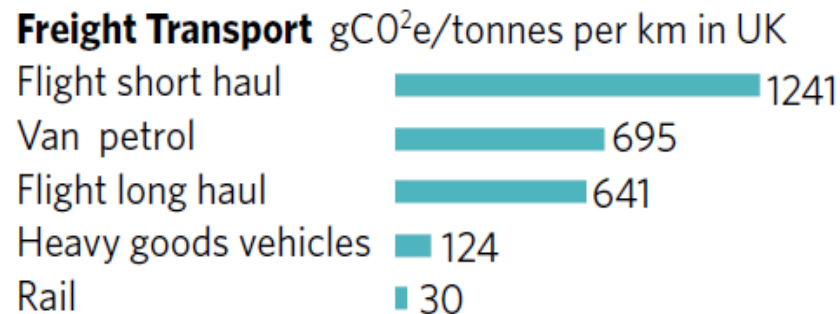
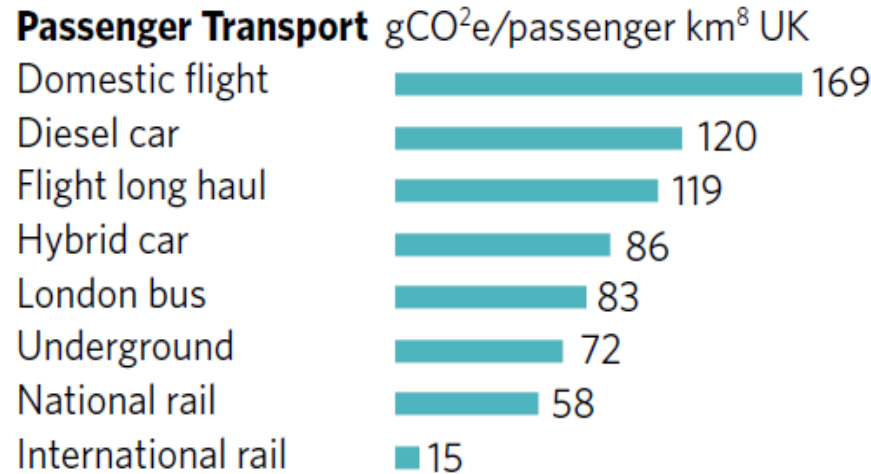


- Total of \$346bn is double last year's estimate
- 89% is investment grade
- China accounts for \$127bn of total (37%), followed by the UK and France
- Low carbon transport, notably rail, is 75%, then clean energy & climate finance

For a low-carbon, climate resilient world

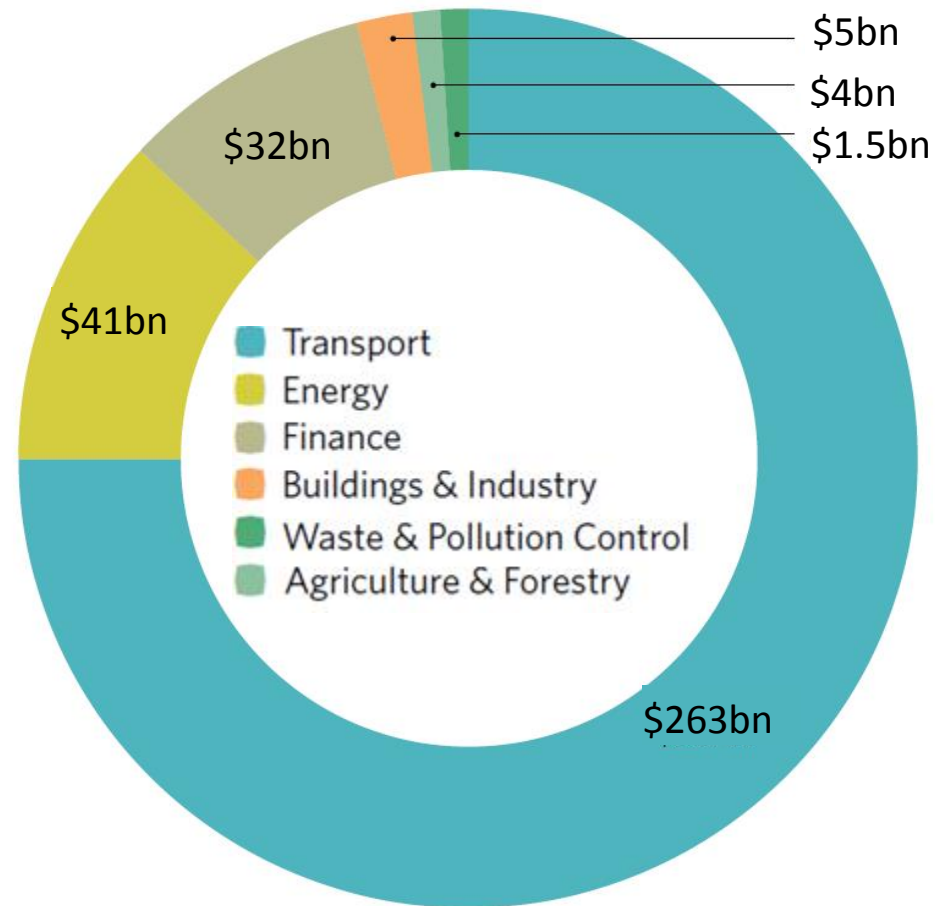
						
Transport	Finance	Energy	Buildings & industry	Waste & pollution control	Water	Agriculture & Forestry
<ul style="list-style-type: none"> - Rail - EVs - Mass trans - biofuels 	<ul style="list-style-type: none"> - Green MDB programs - Transport finance 	<ul style="list-style-type: none"> - Wind power - Solar power - Hydro - Nuclear - Biomass 	<ul style="list-style-type: none"> - LEDs - Insulation - Energy star appliances - EE munis - Retrofit - Green buildings 	<ul style="list-style-type: none"> - Recycling - Recycled products - Air filters - Landfill gas - WTE 	<ul style="list-style-type: none"> - Sustainable water mgmt - Efficient technology - Resilient infrastruc. 	<ul style="list-style-type: none"> - Certified Paper /wood - Forest mgmt - Afforrestatn - Organic seeds & fertilizers

Modal shift to rail is a key low-carb solution



\$346bn breakdown (at 1 Mar)

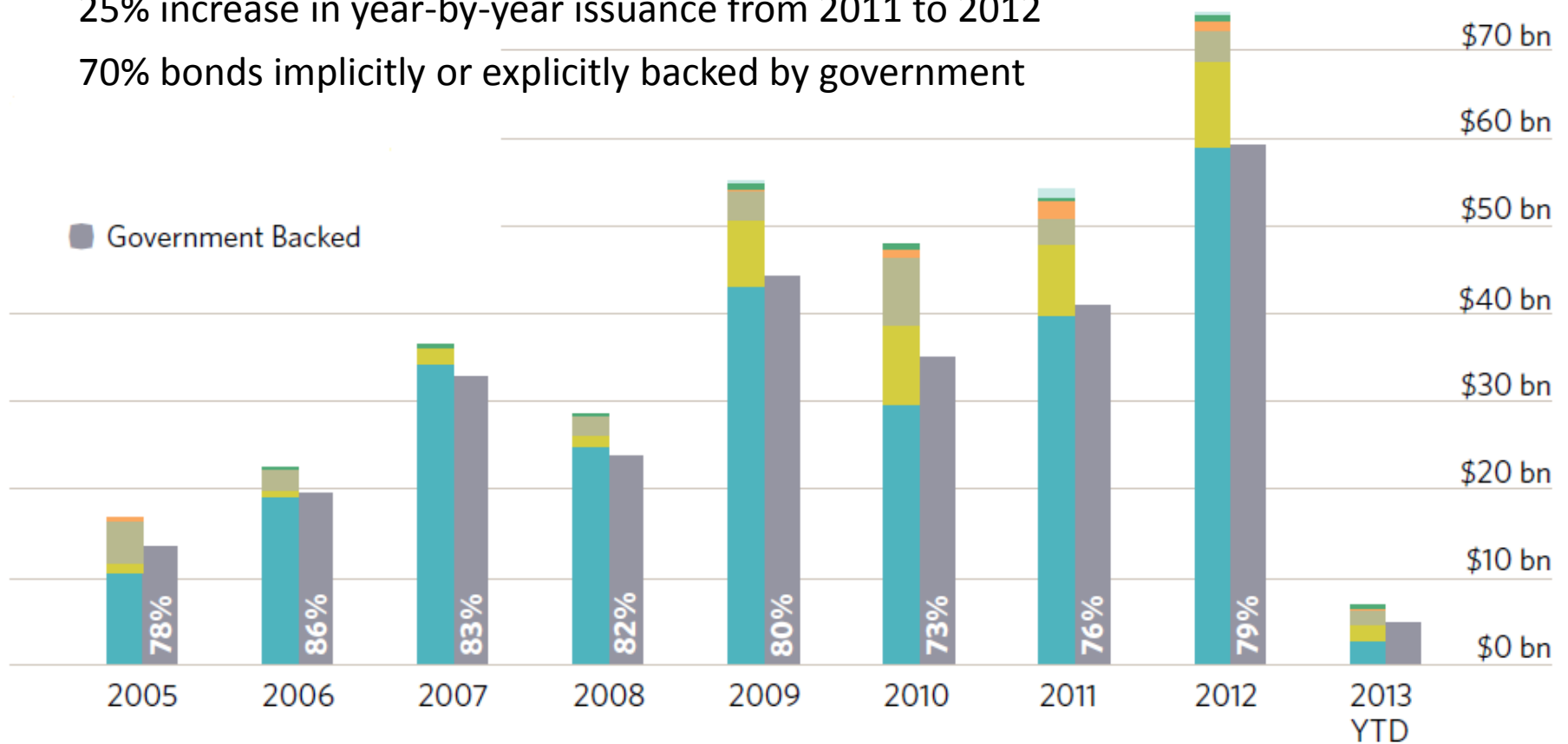
- Transport dominates at 76%
- Energy = \$41bn
- Climate Finance = \$32bn



2012 largest issuance year to date

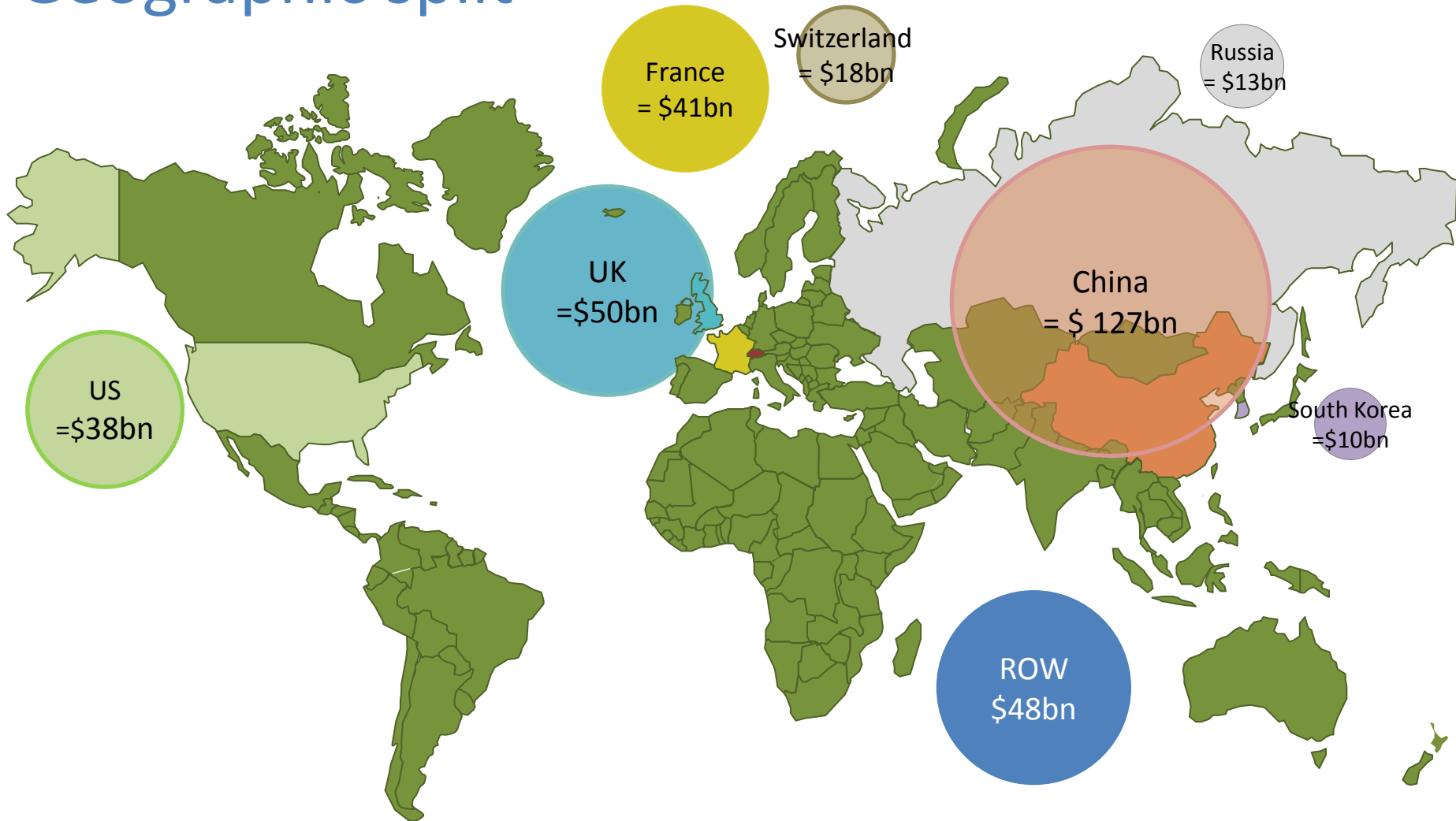
25% increase in year-by-year issuance from 2011 to 2012

70% bonds implicitly or explicitly backed by government

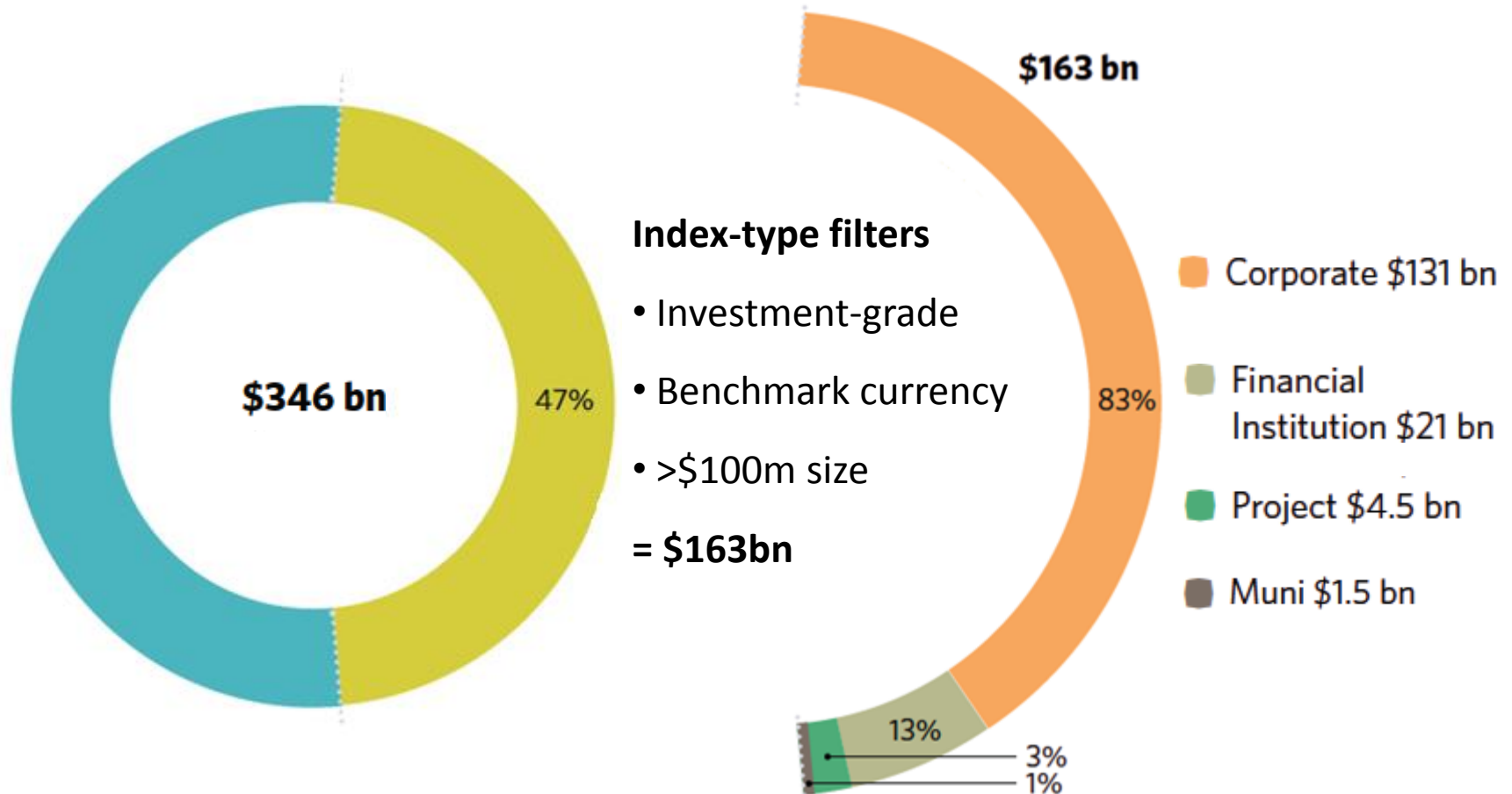


Bonds outstanding 1 March 2013

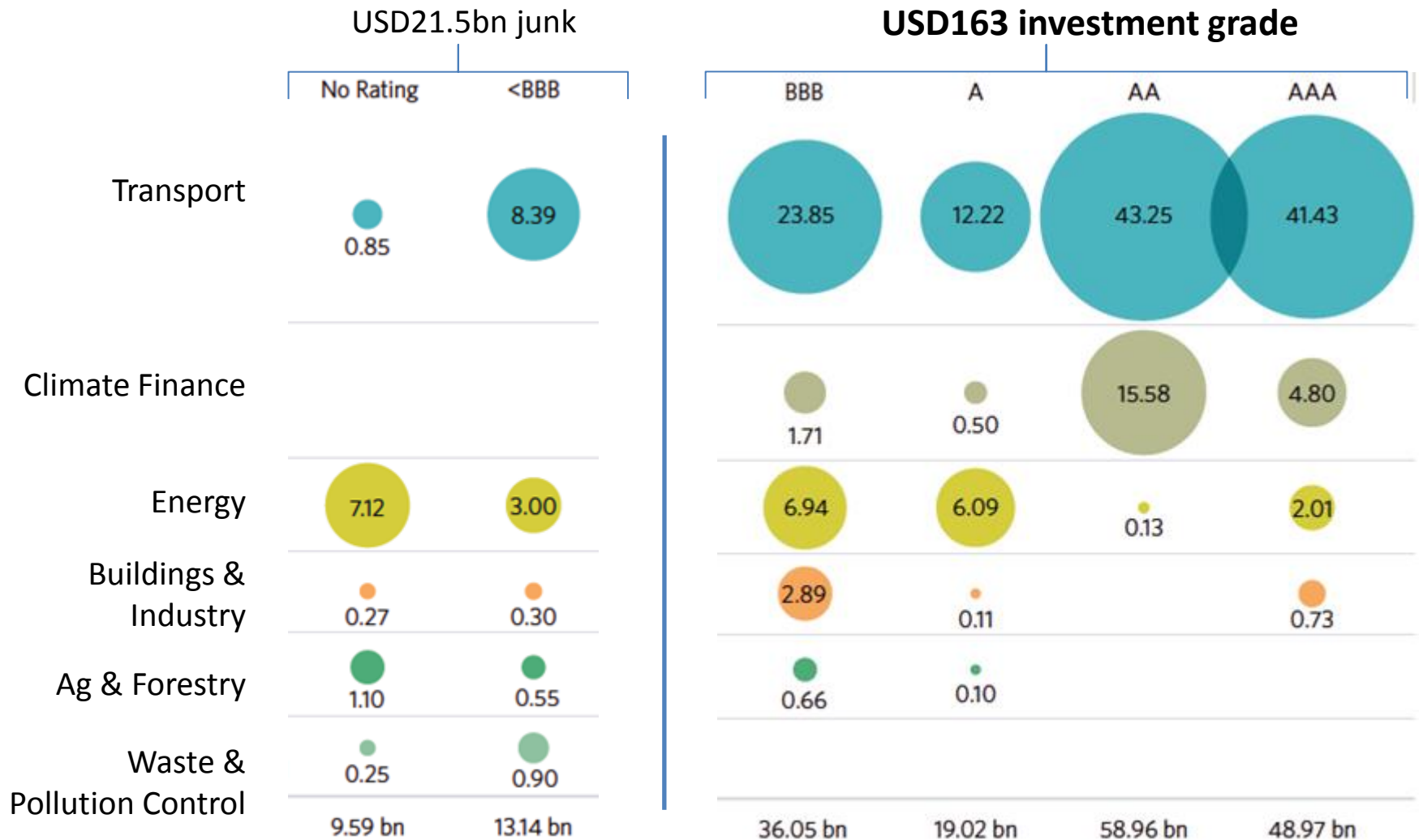
Geographic split



Index-type filters reveal \$163bn universe



A reasonable spread of investment grade



Transport



- Rail, bus, 2nd generation biofuels, electric vehicles
- Rail dominates with \$263bn (rail for coal is excluded)
 - High-speed rail & refurbishment in China large share
 - China Ministry of Rail included but questions over future bonds
 - Mature industry, hence volume
- Future:
 - Electric vehicles: Tesla bond
 - Tripling of rail
 - But other sectors will grow even faster

Energy



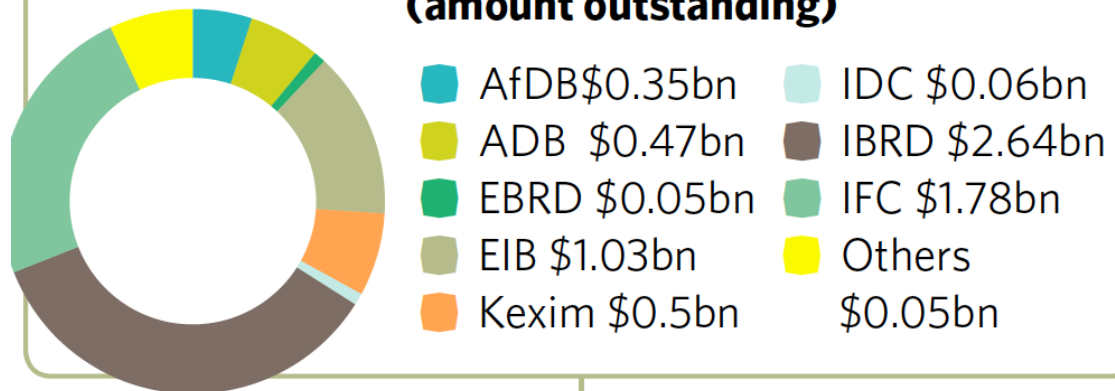
- \$41bn
 - Solar: 21%; wind: 24%
 - Nuclear: 32%
 - Hydro: 8%
- \$5.5bn in solar & wind project bonds incl. recent Canadian.
 - Mid American takes it to \$6.5bn
 - Large hydro bonds from tropical regions not included
- **Future:**
 - RE investment funds
 - Rooftop solar ABS
 - Utility-scale assets
 - e.g. USD98bn potential EU offshore wind bonds

Finance



- \$32bn from Financial Institutions
 - finance/leasing: EuroFIMA \$16bn, Indian Rail \$7bn, Porterbrook, IREDA
 - Climate/Green labelled \$7.2bn (\$2.5bn in 2012-2013)
 - Benchmarks from IFC (\$1bn) & Kexim (\$0.5bn) oversubscribed
- More recent: EIB & World Bank \$1.5bn over Summer
- **Future:** green/climate-labelled from Munis; commercial & public banks

**Breakdown of climate/green labelled bond programs
(amount outstanding)**



Buildings & Industry



- \$4.8bn outstanding for EE solutions in buildings & industry
- 13% from LED manufacturers
- LG Electronics
 - Has near 100% EE certified products, far more than peers
- **Future:** green supply chain + low-carbon buildings

Agriculture & Forestry



- \$3.8bn identified from corporate issuers
- 88% from forest management and paper manufacturers with sustainability certifications across operations
- Sweden, Portugal and US are main sources
- **Future:** climate-resilient agriculture

Waste



- \$1.4 bn outstanding
- Largely recycling and recycled
- Diversity of large waste management companies means bonds are not included
- **Future:** corporate use-of-proceeds-linked, e.g new WTE plants or recycling within large waste management companies

Water



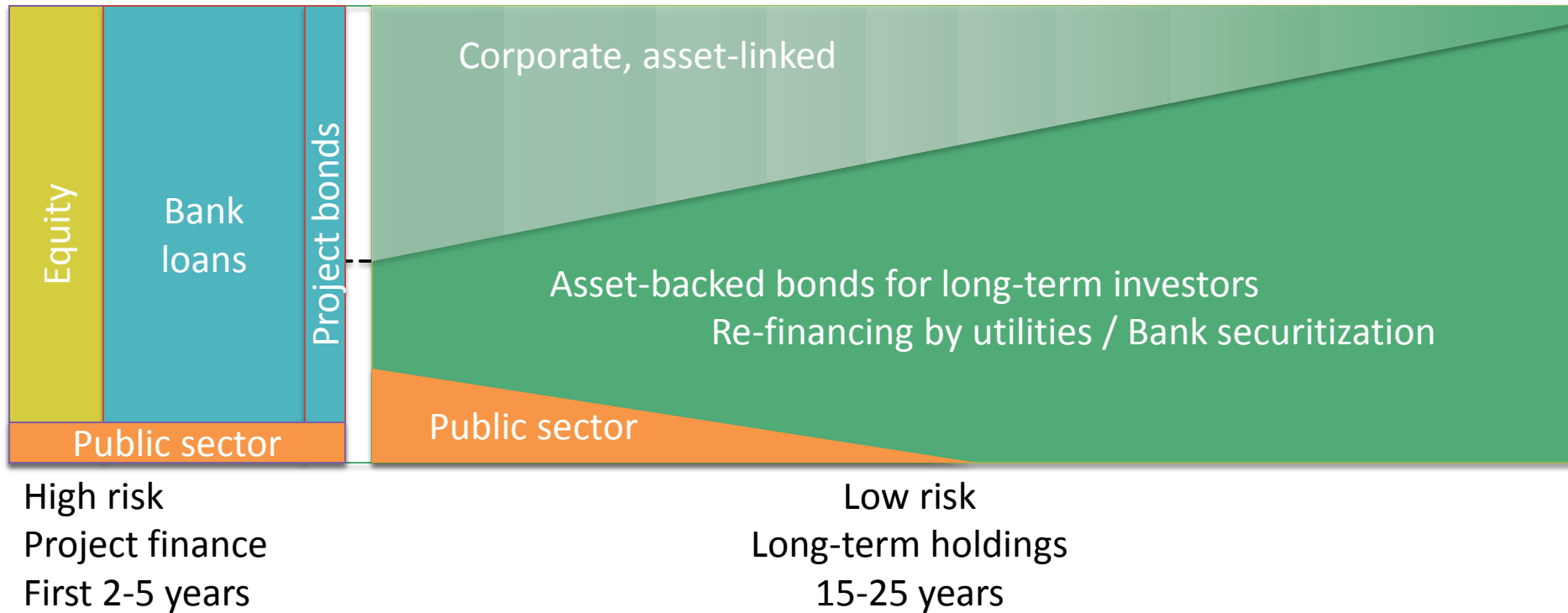
- Bonds financing a climate-resilient water supply remain difficult to identify
- Research indicated greater awareness of adaptation scenarios but not yet up to standard
- **Future:** flood protection; water infra in drought-threatened areas

What's needed

- **Standards:** common definitions
- **Scale:** aggregation
- **Public sector support**
 - Credit enhancement in emerging markets
 - Cornerstone investors
 - MDB screening
- **Buy-side voice**
 - Ask for climate bonds



Bonds and the capital pipeline



What's needed: scale

- Green securitization
 - Supportive regulation
 - Standardisation** / transferability
- Cooperative regional aggregators
 - e.g. Green Deal Finance Warehouse
- Covered bonds legislation
 - Dual recourse transparency
 - RE / EE / etc
- Green mortgages
 - Risk weighting



What's needed: standards

Industry Advisory Group



\$11tn Climate Bond Standards Board



Technical Working Groups



European Bank
for Reconstruction and Development



Investor Network on
CLIMATE RISK



Straightforward certification

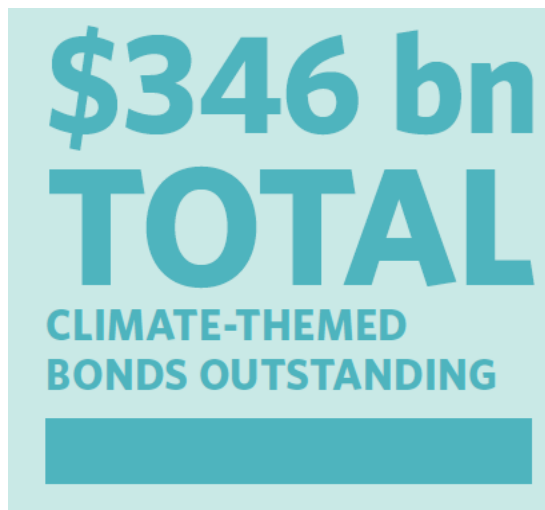


Taxonomy: definitions

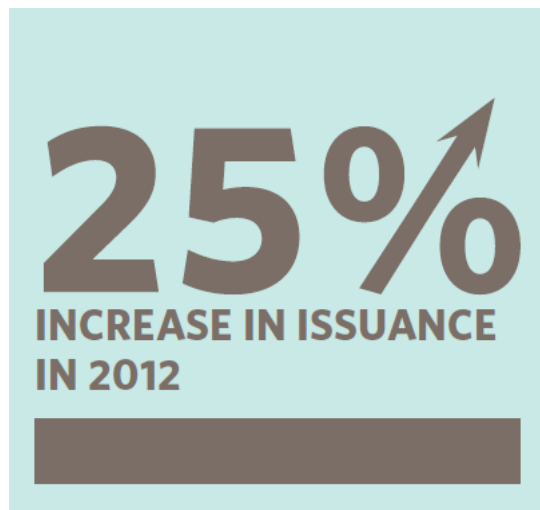


ICT/Broadband + Infra upgrades for adaptation + Flood protection + Port upgrades

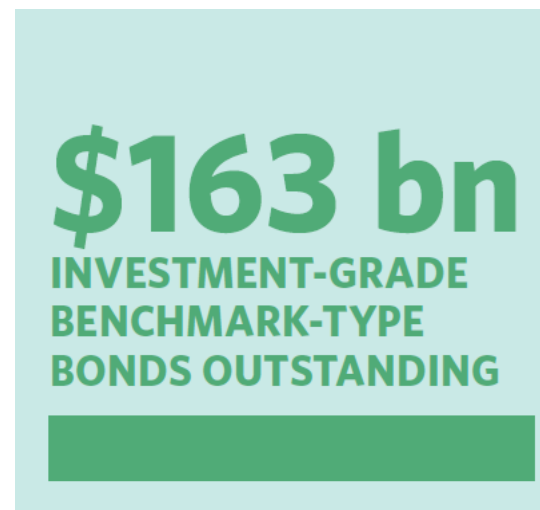
Those takeaways again



Expect growth



Continuing rate



Growth



Questions?

<http://www.climatebonds.net>



Climate Bonds INITIATIVE