



Bonds



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Definition

A bond is a debt investment in which an investor loans money to an entity (typically corporate or governmental) which borrows the funds for a defined period of time at a variable or fixed interest rate.



Bonds

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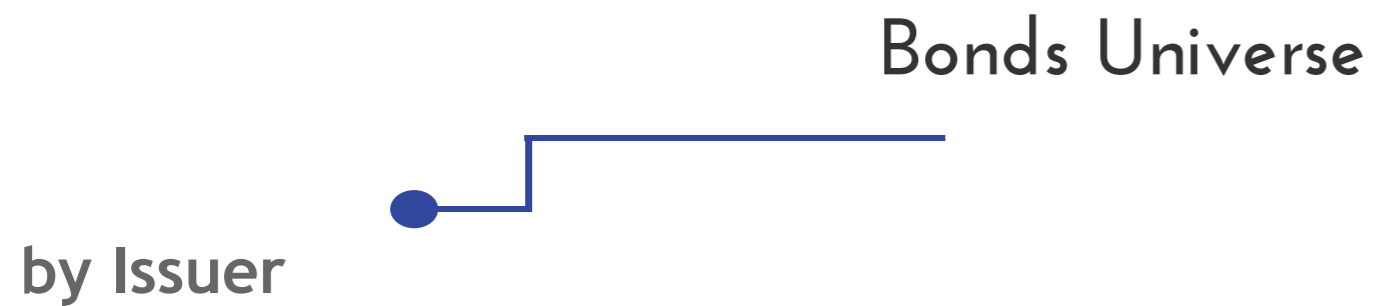
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Bonds Universe

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Bonds Universe

by Issuer

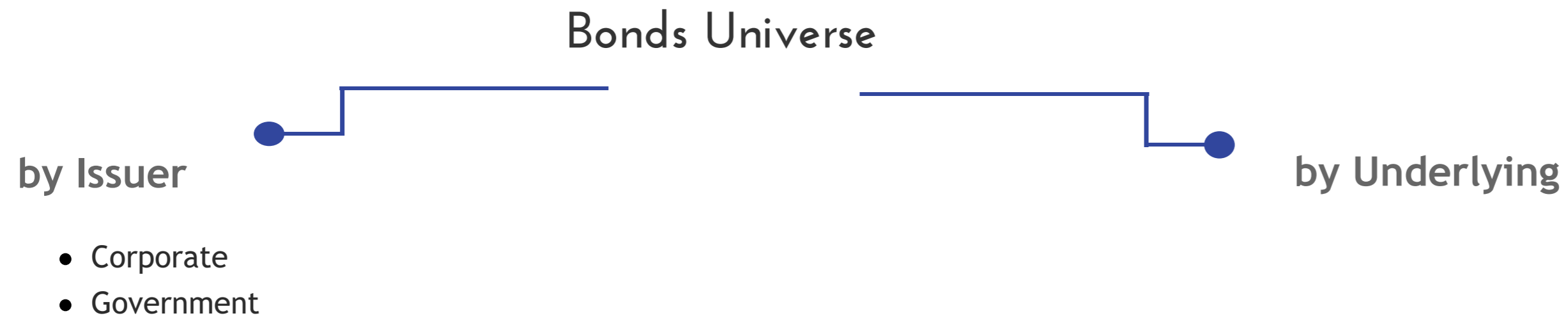
- Corporate
- Government



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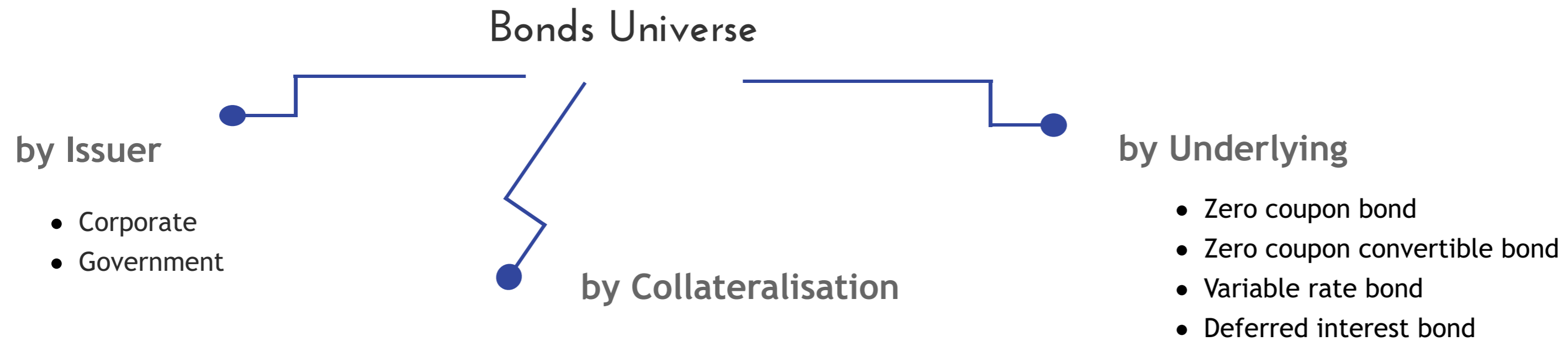
by Underlying

- Zero coupon bond
- Zero coupon convertible bond
- Variable rate bond
- Deferred interest bond

Bonds

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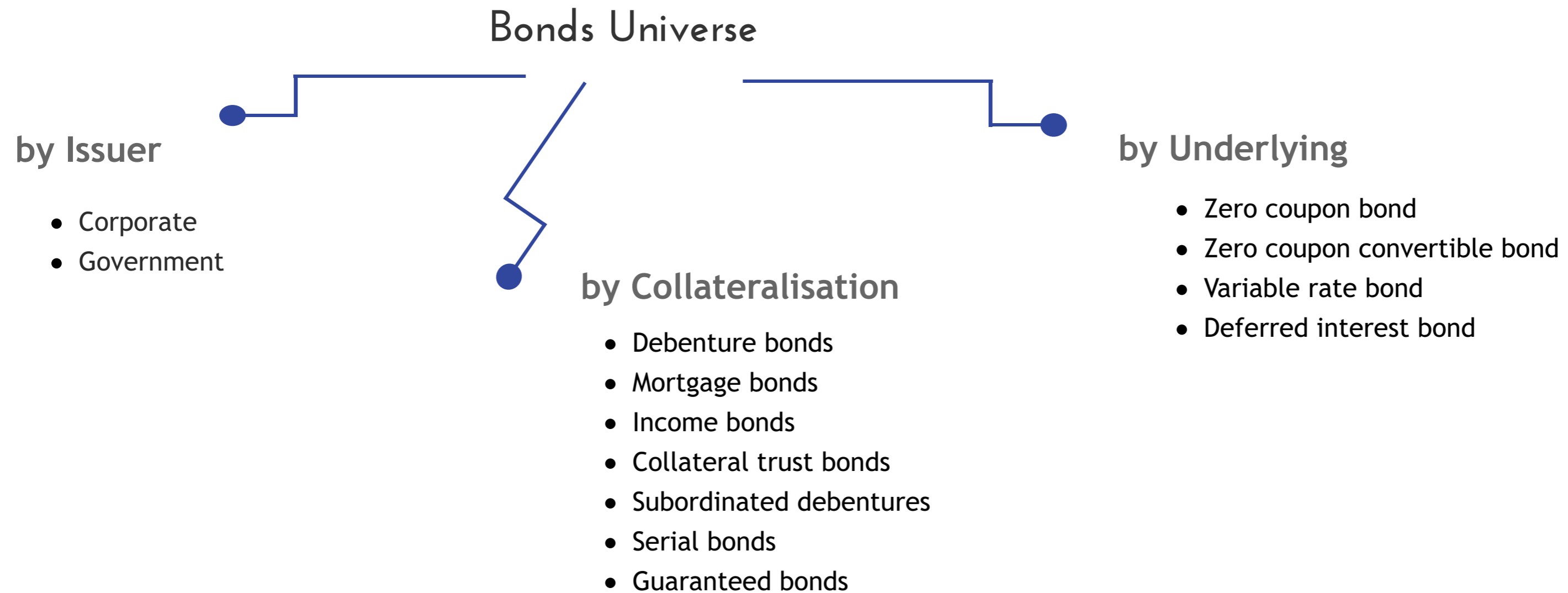
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What is a **green bond** ?



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The key difference between a green bond and a regular bond is that an issuer publicly states a bond is funding 'green' project. It is called a 'Use of Proceed'.



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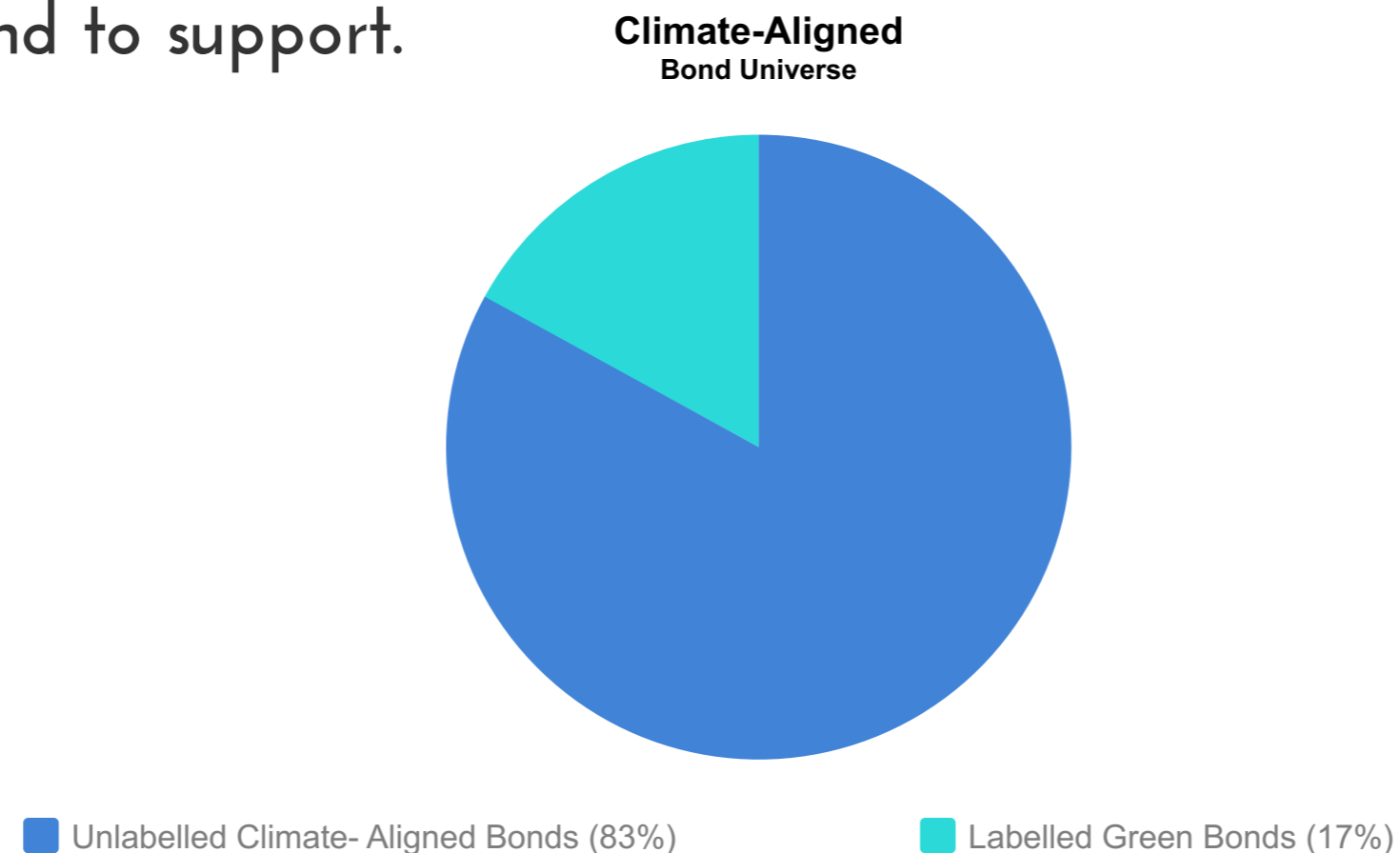
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When evaluating a bond product, standard financial characteristics (such as maturity, coupon, price, and credit quality of the issuer) are analyzed. For green bonds, except for these characteristics, investors also assess the specific environmental purpose of the projects that the bonds intend to support.

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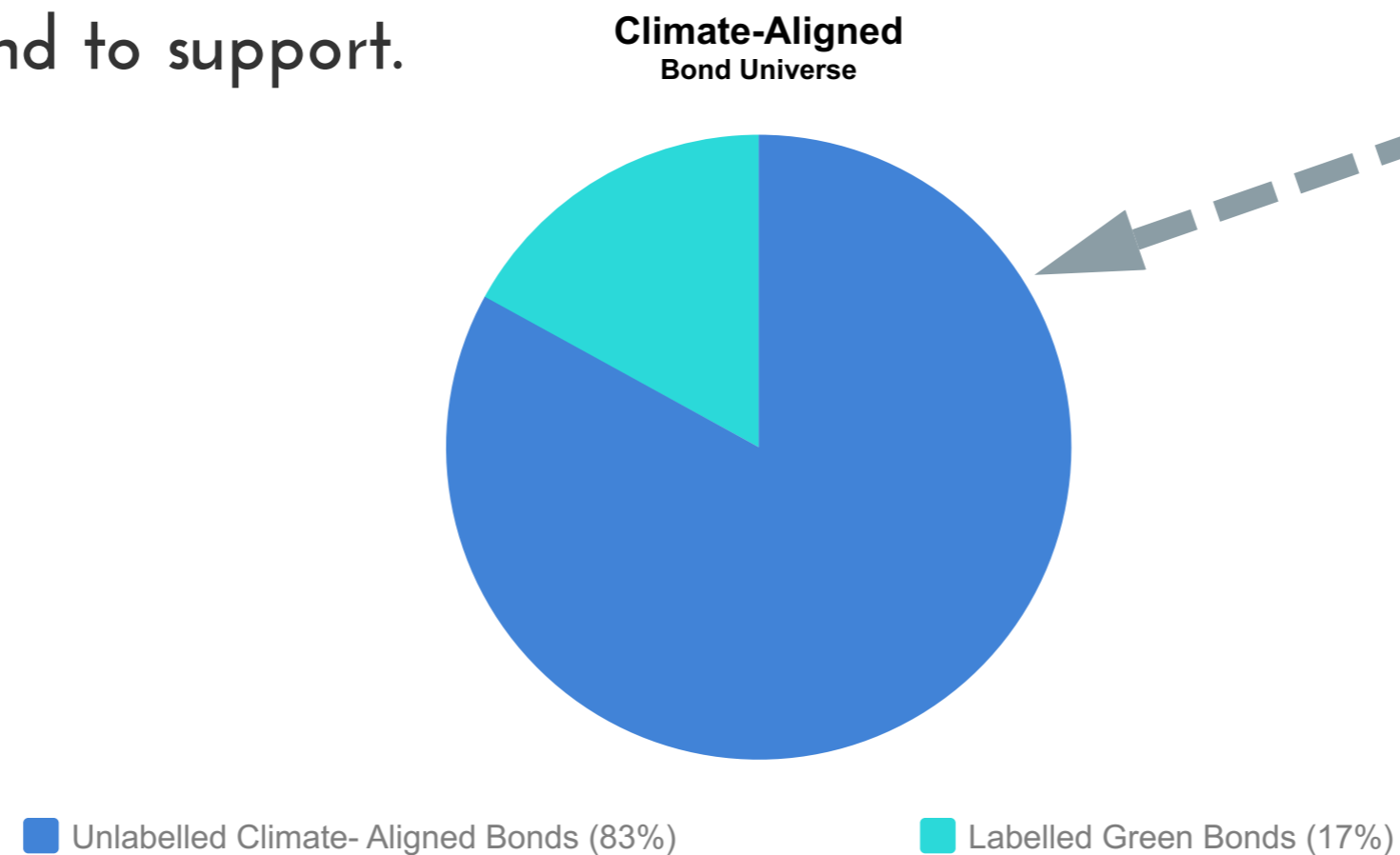
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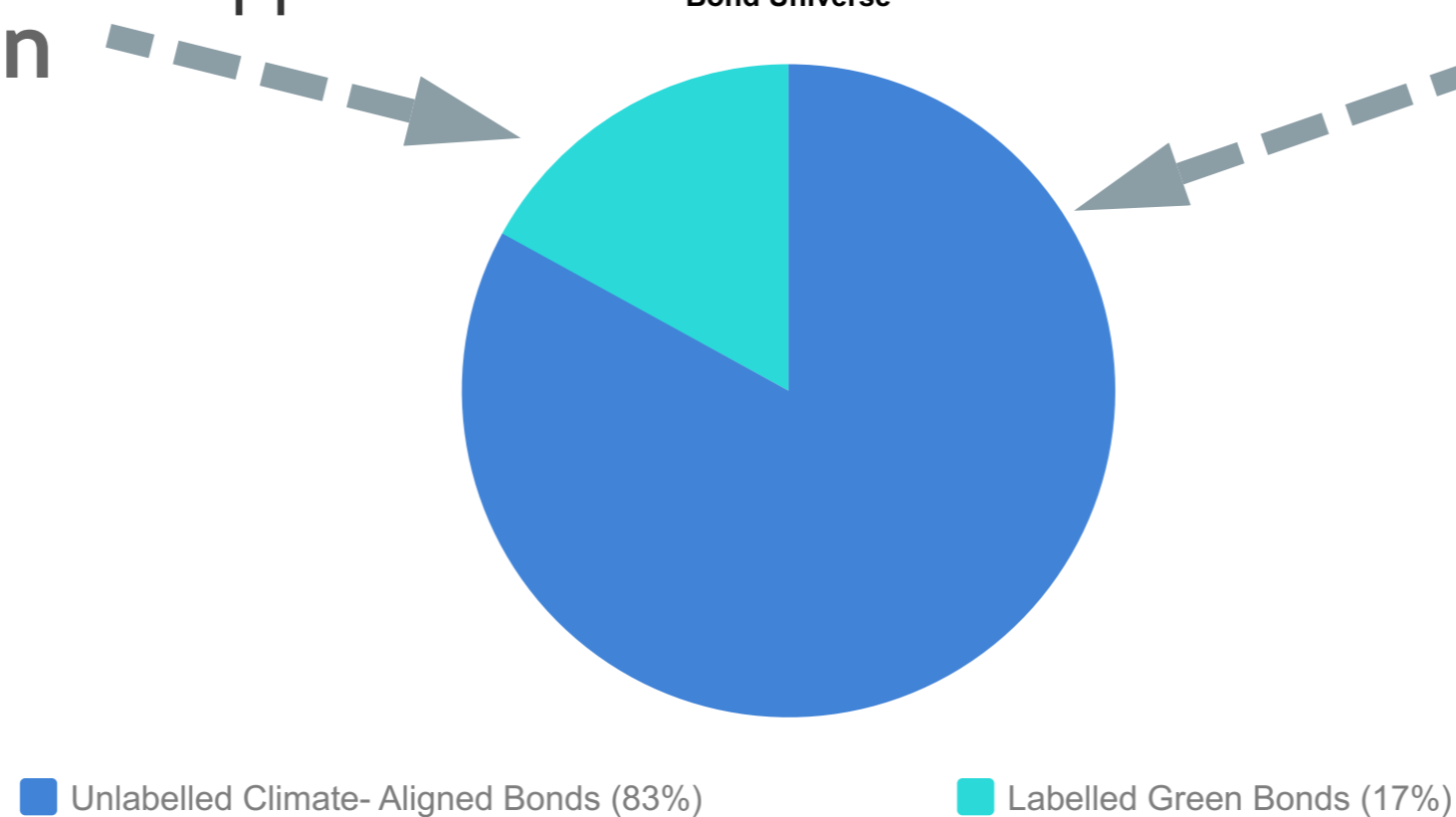
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\$118 bn

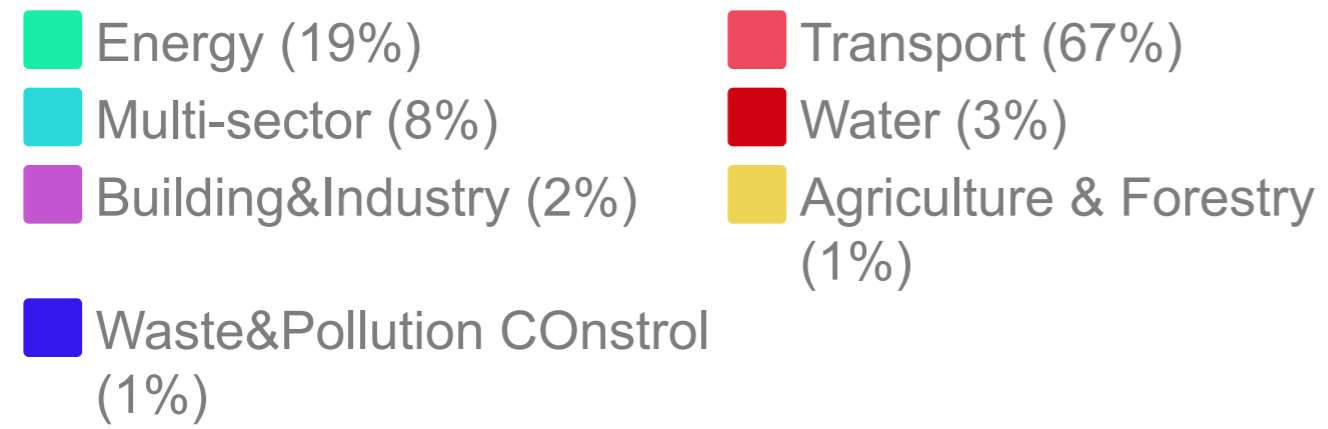
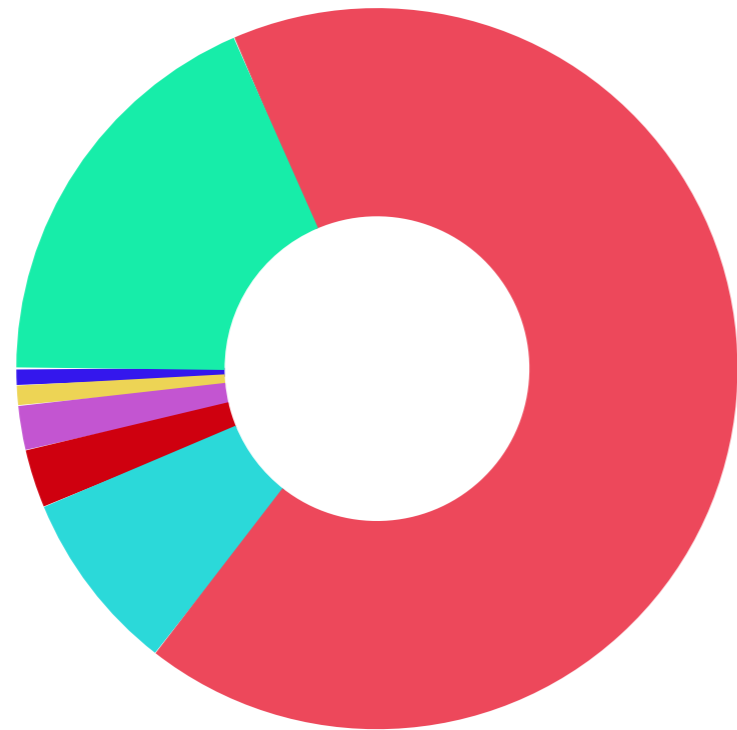
\$576 bn

Climate-Aligned
Bond Universe



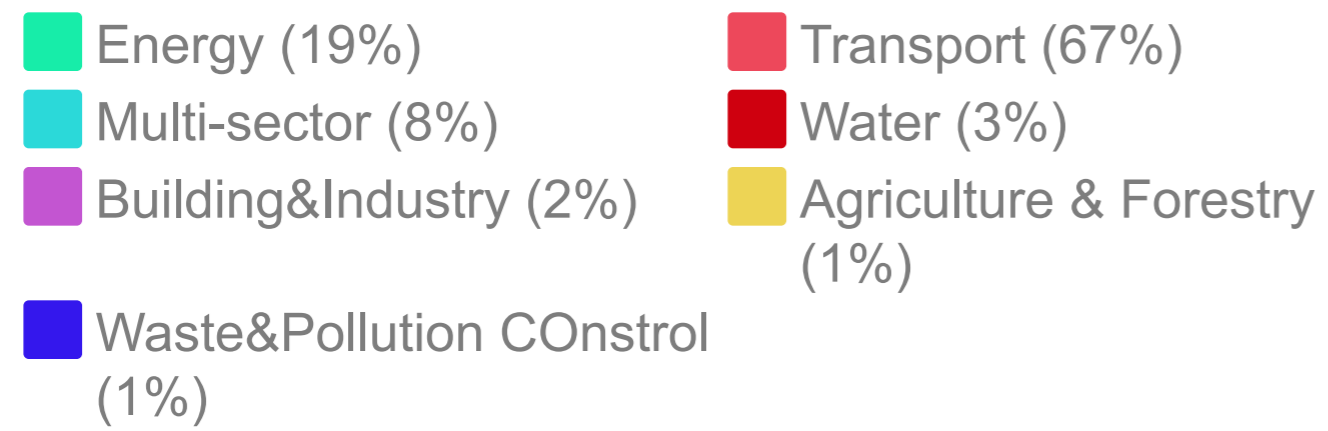
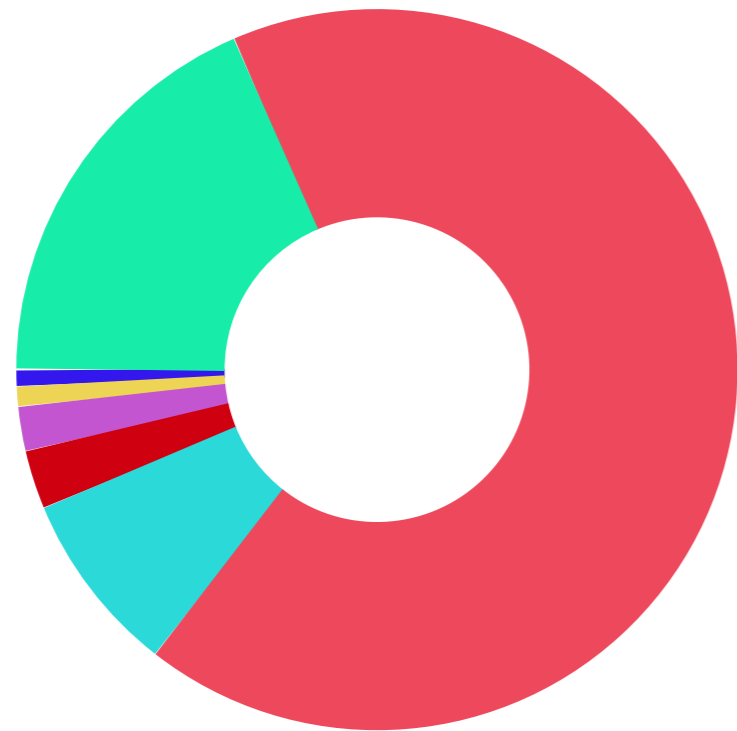
Climate - Aligned Bond Market

Sector Division
Outstanding bonds

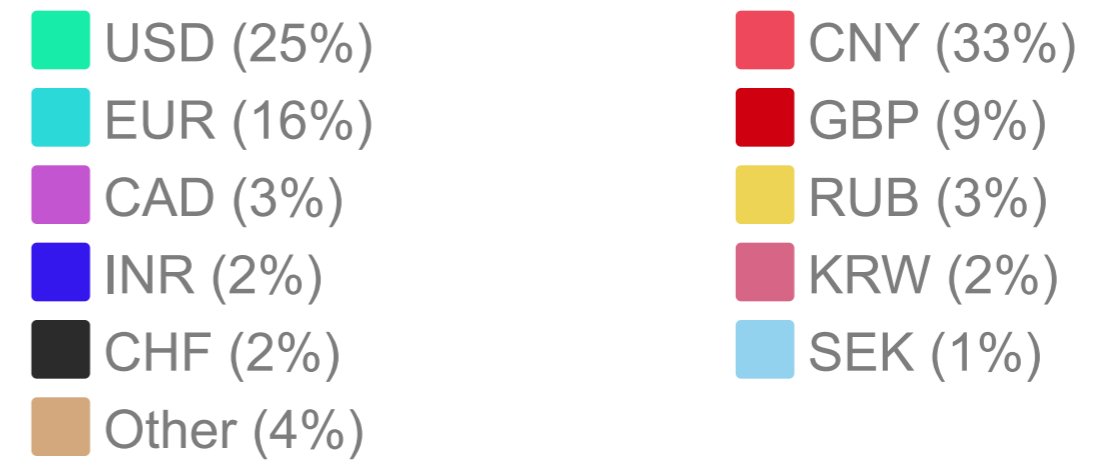
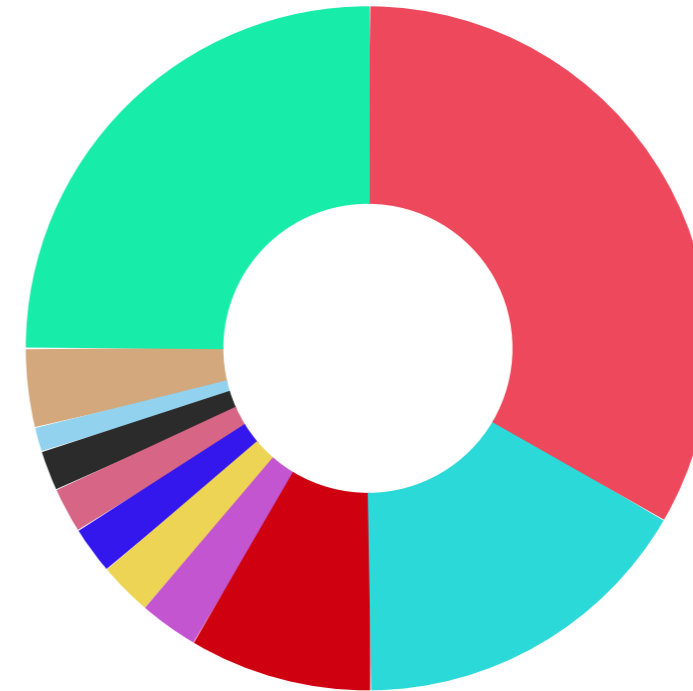


Climate - Aligned Bond Market

Sector Division
Outstanding bonds



Currency Division
Outstanding bonds





What does it mean 'green' ?

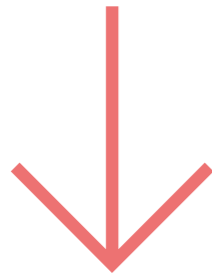
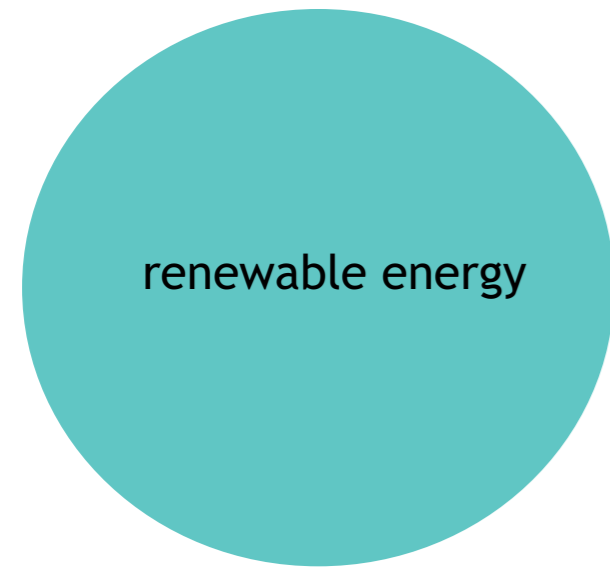


What does it mean 'green' ?



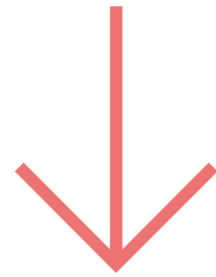
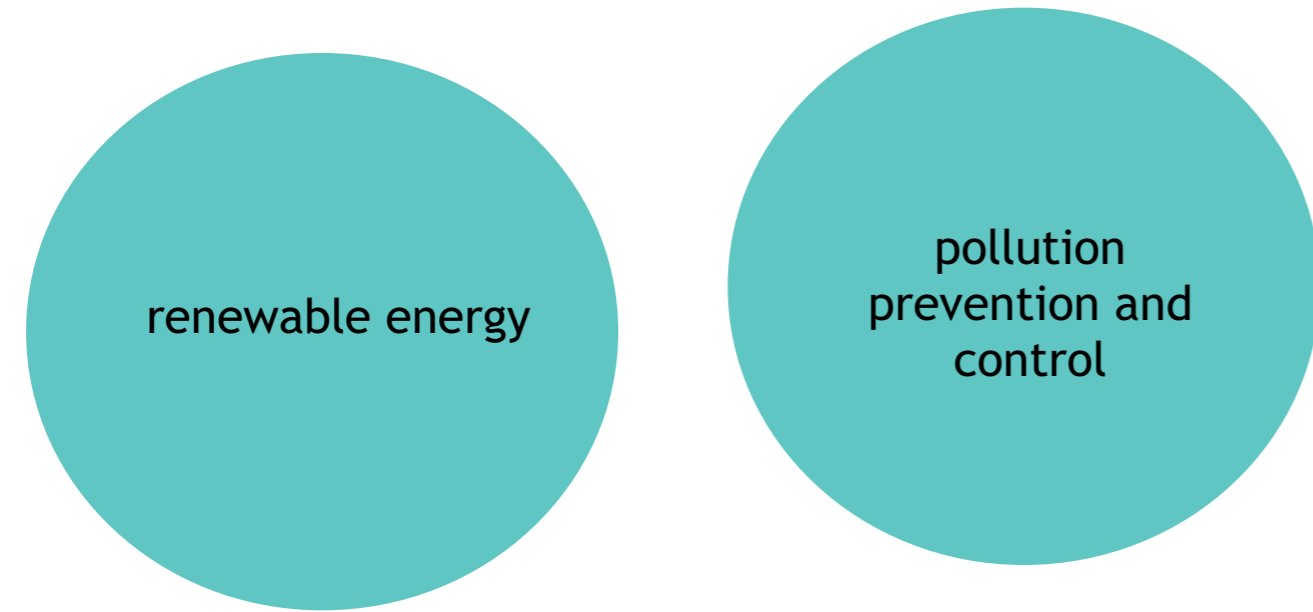
renewable energy

What does it mean 'green' ?



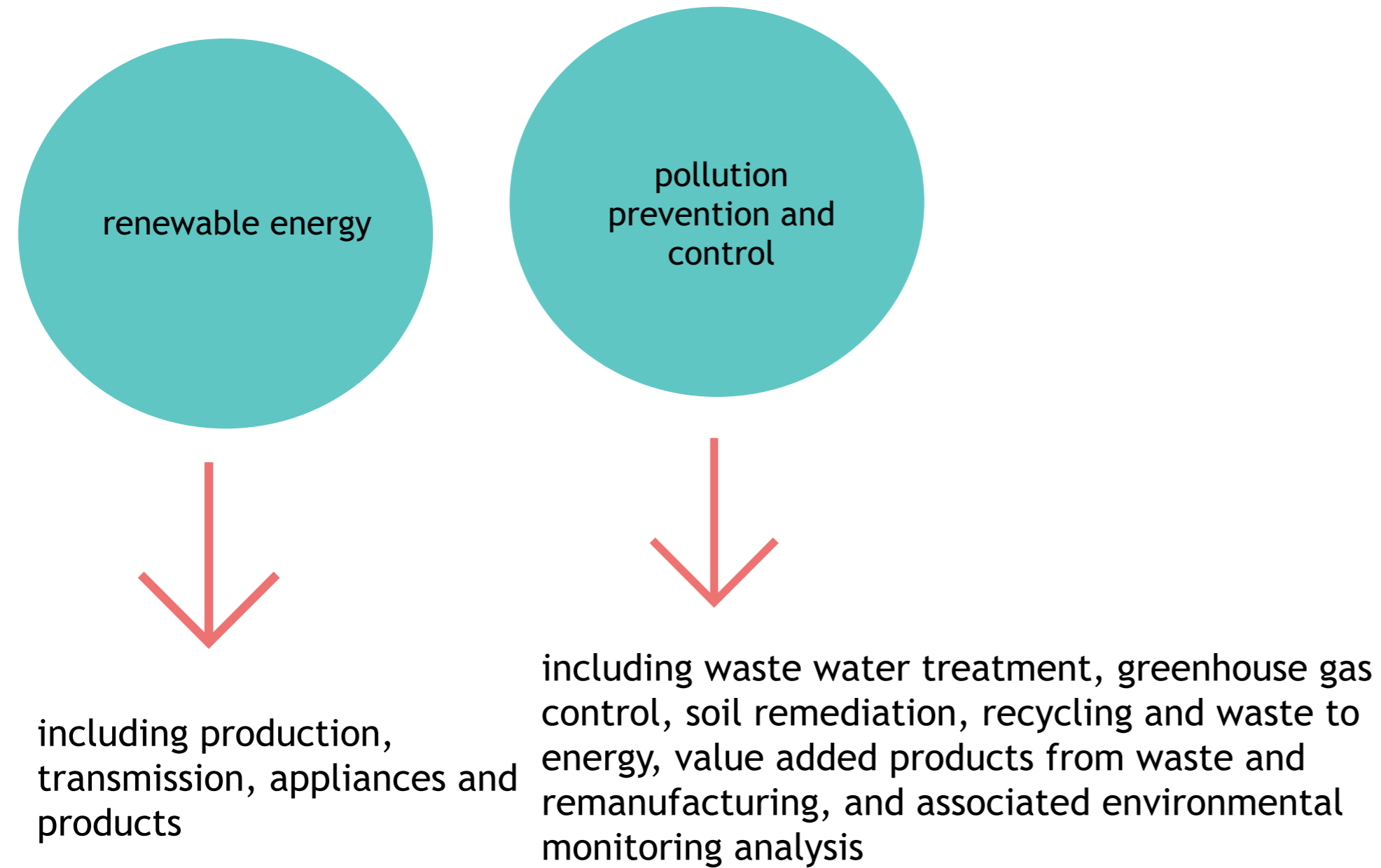
including production,
transmission, appliances and
products

What does it mean 'green' ?

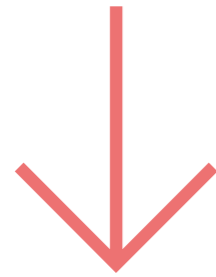
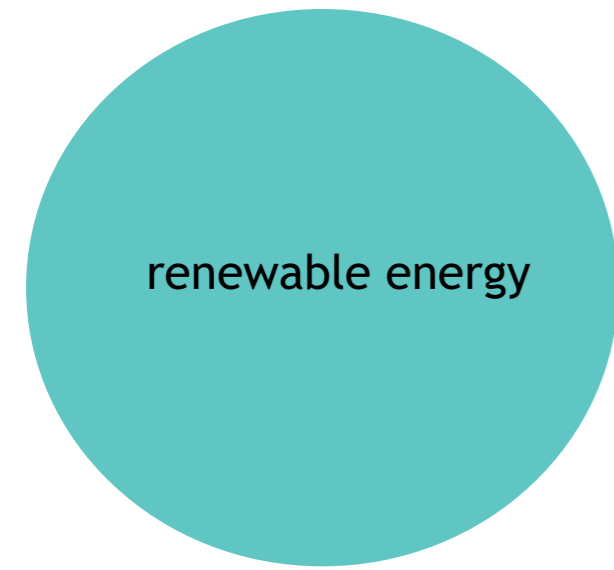


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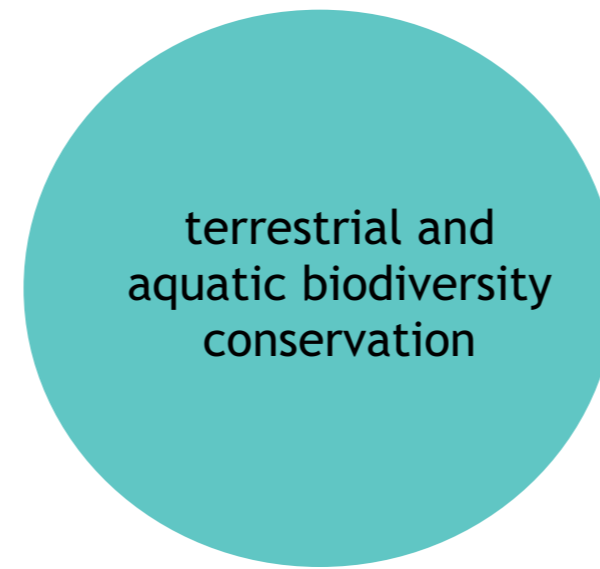
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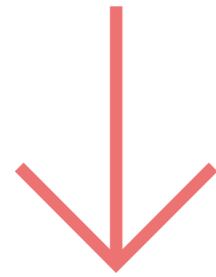
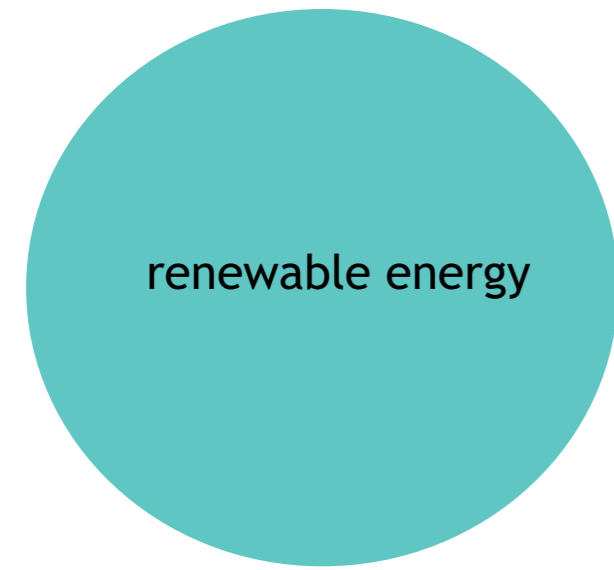
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including waste water treatment, greenhouse gas
control, soil remediation, recycling and waste to
energy, value added products from waste and
remanufacturing, and associated environmental
monitoring analysis



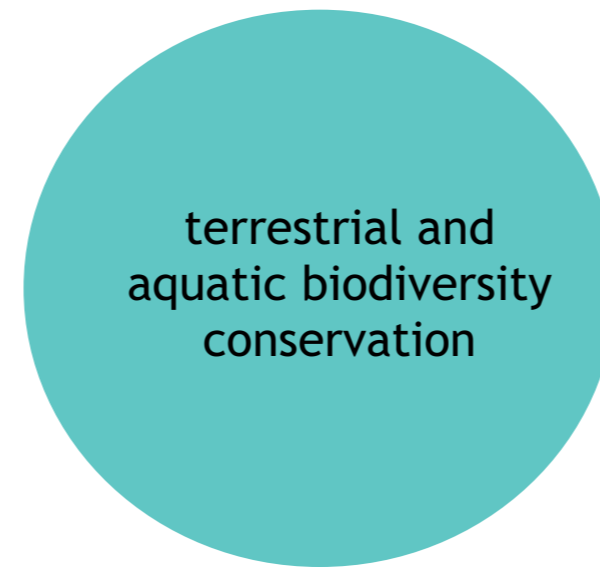
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including production, transmission, appliances and products

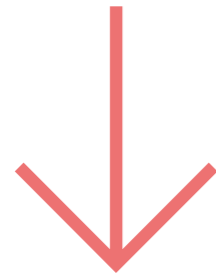
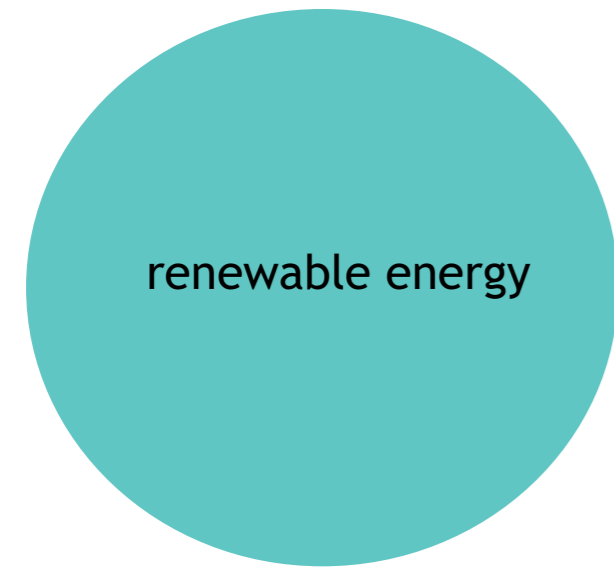


including waste water treatment, greenhouse gas control, soil remediation, recycling and waste to energy, value added products from waste and remanufacturing, and associated environmental monitoring analysis



including the protection of coastal, marine and watershed environments

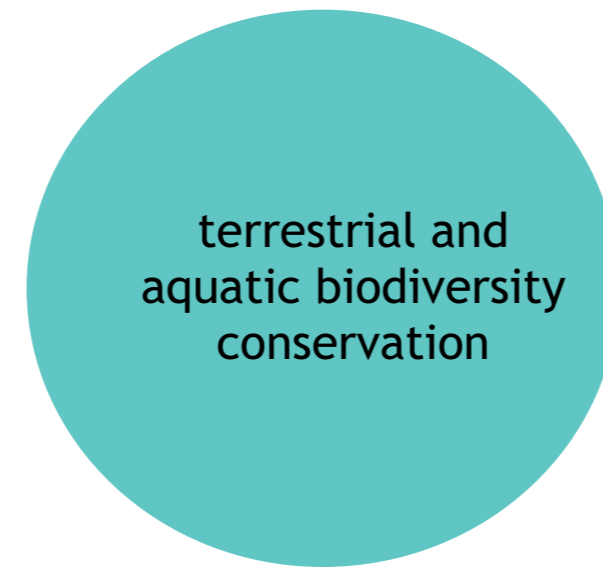
What does it mean 'green' ?



including production, transmission, appliances and products



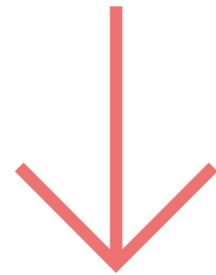
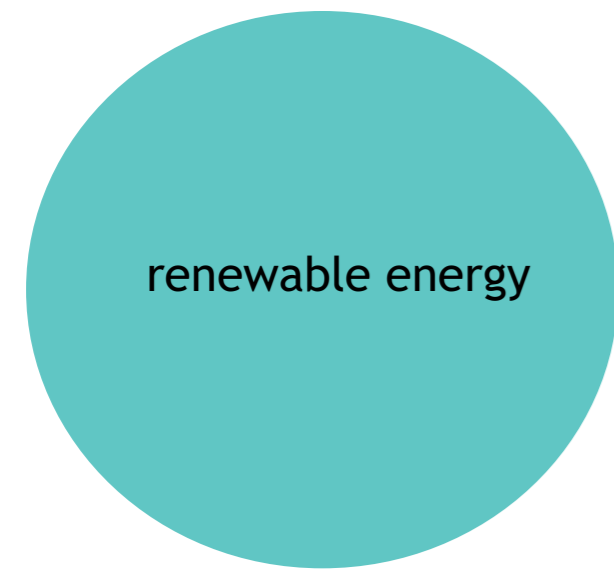
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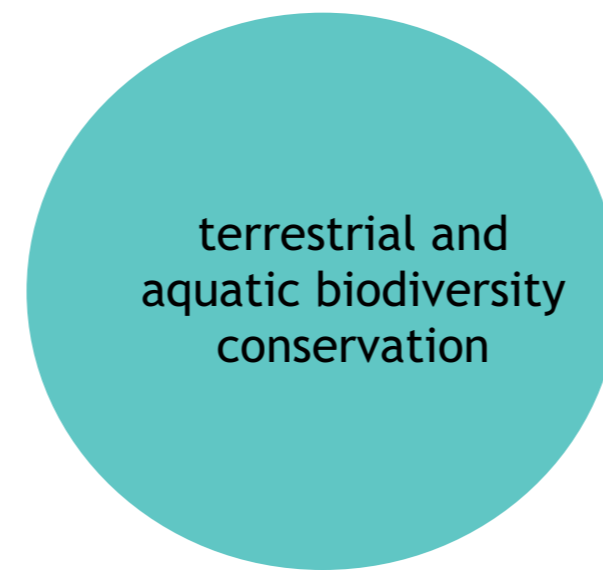
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including production, transmission, appliances and products



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including the protection of coastal, marine and watershed environments



including sustainable infrastructure for clean and/or drinking water, sustainable urban drainage systems and river training and other forms of flooding mitigation

What does it mean 'green' ?

renewable energy

pollution prevention and control

terrestrial and aquatic biodiversity conservation

sustainable water management

eco-efficient products

including the protection of coastal, marine and watershed environments

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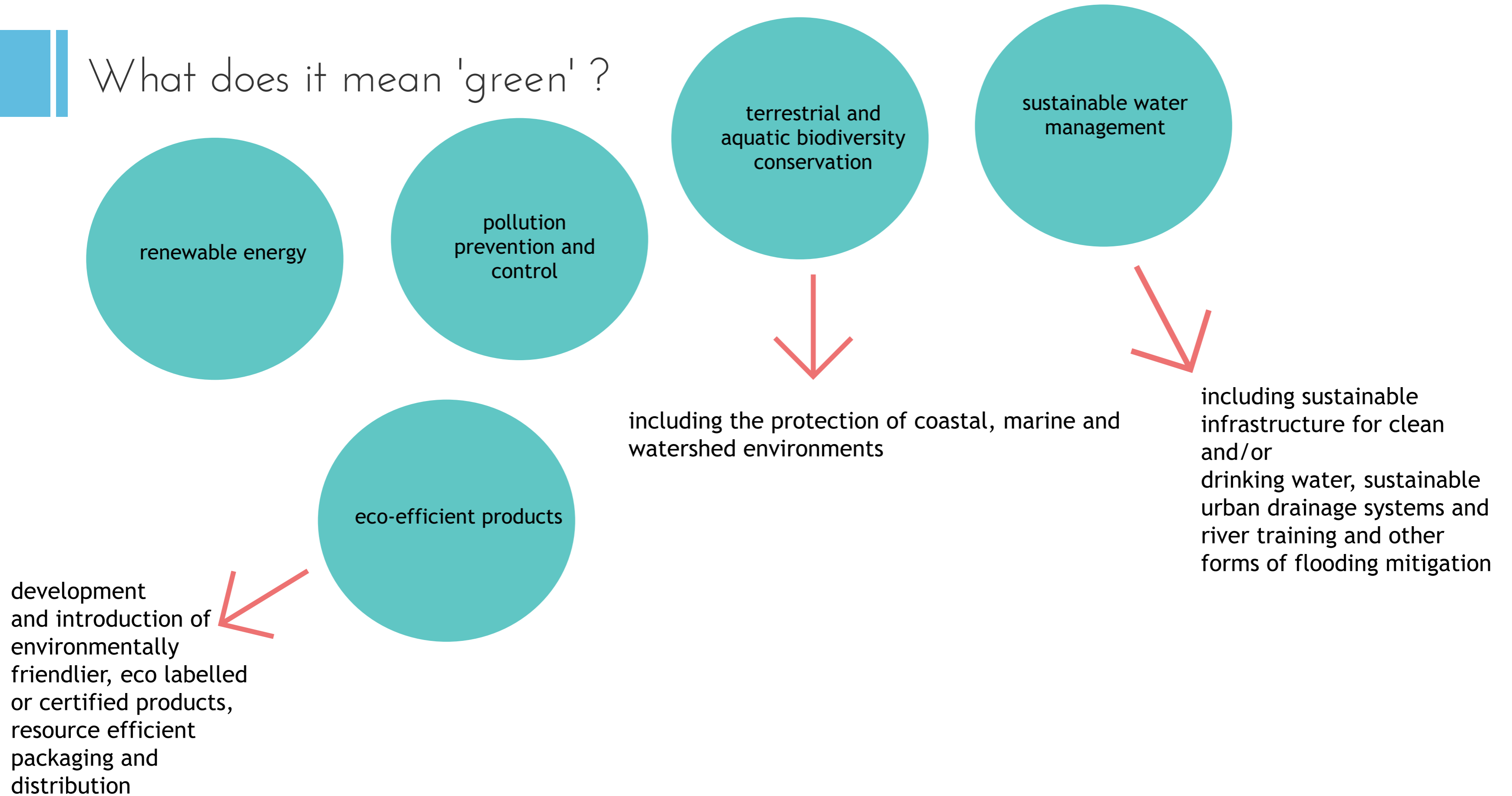
sustainable water management

eco-efficient products

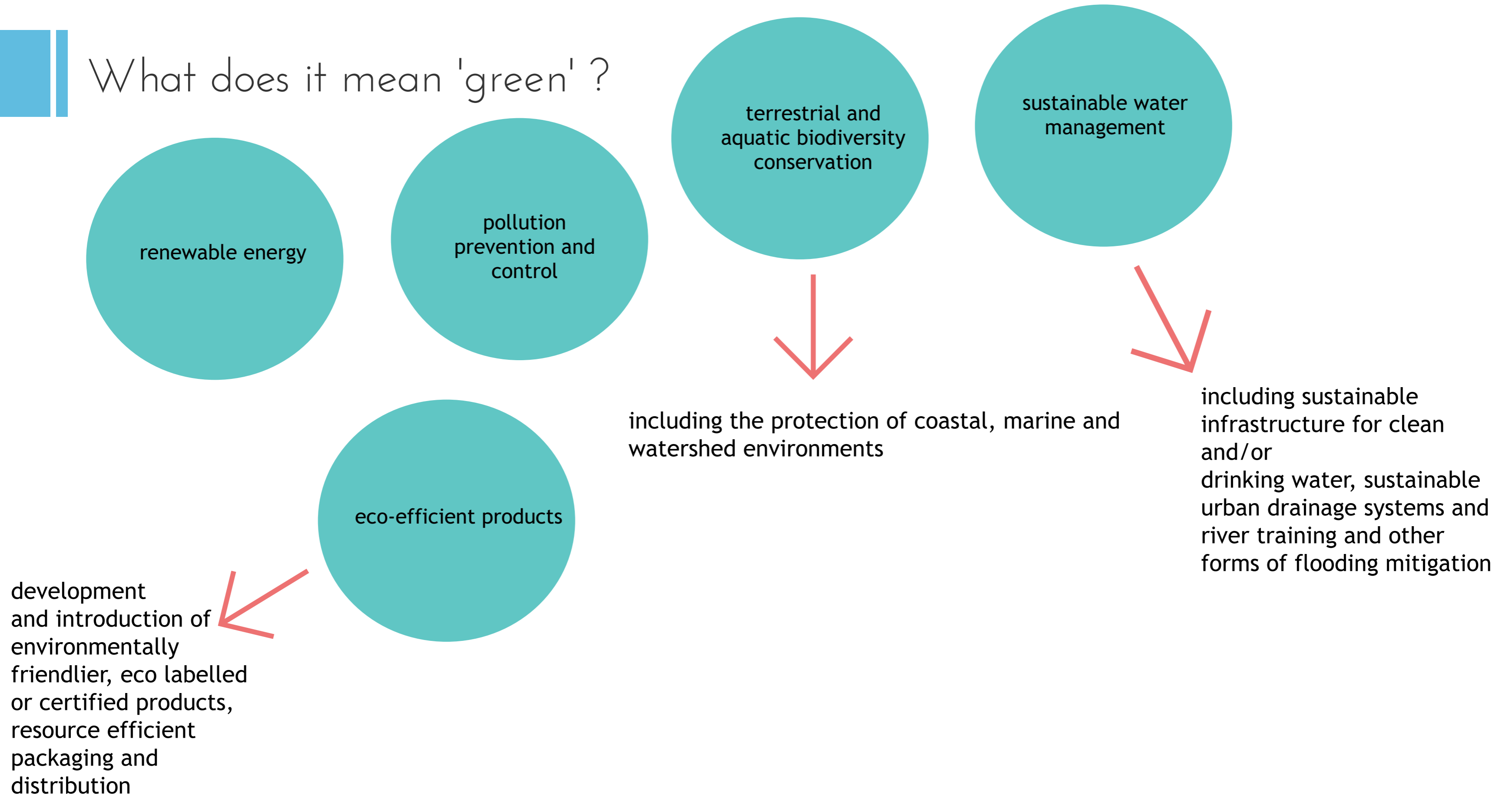
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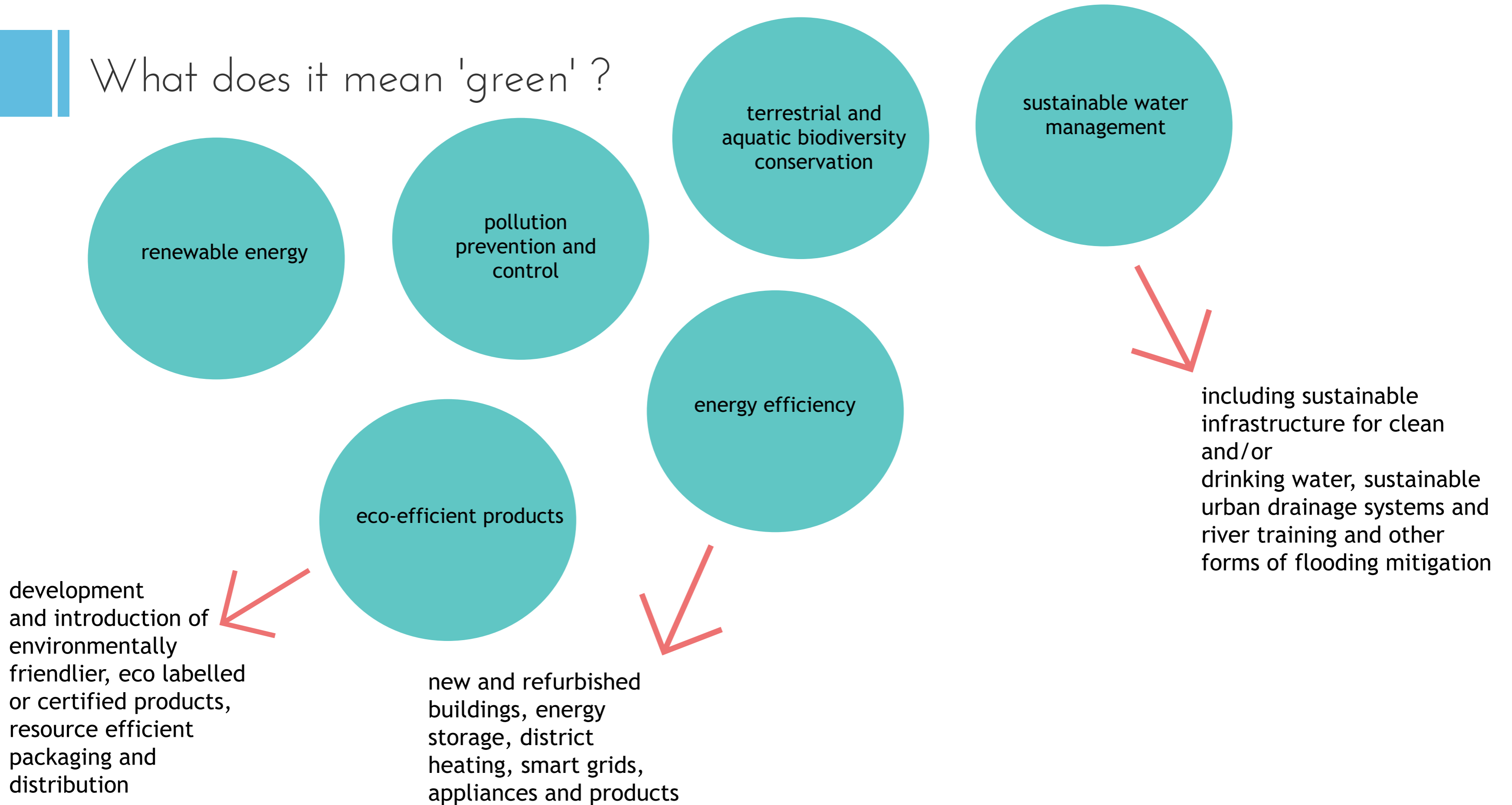
energy efficiency

eco-efficient products

development and introduction of environmentally friendlier, eco labelled or certified products, resource efficient packaging and distribution

including sustainable infrastructure for clean and/or drinking water, sustainable urban drainage systems and river training and other forms of flooding mitigation

What does it mean 'green' ?



What does it mean 'green' ?

renewable energy

pollution prevention and control

terrestrial and aquatic biodiversity conservation

sustainable water management

sustainable management of living nature resources

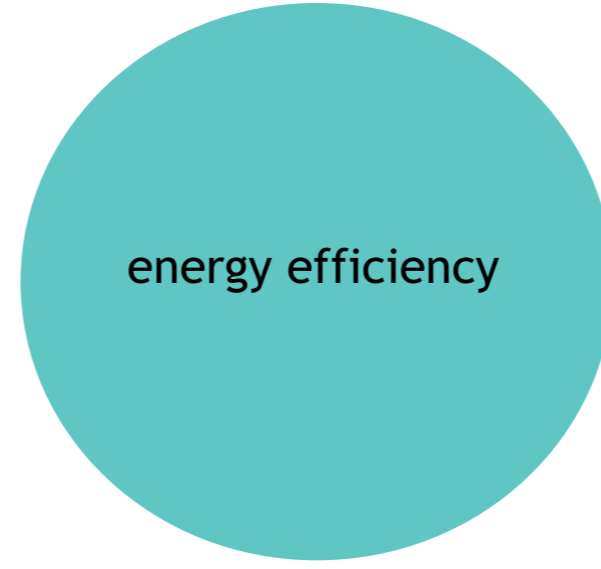
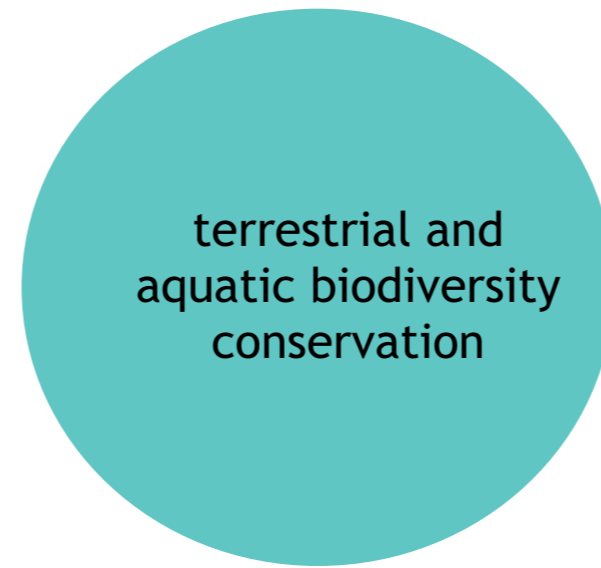
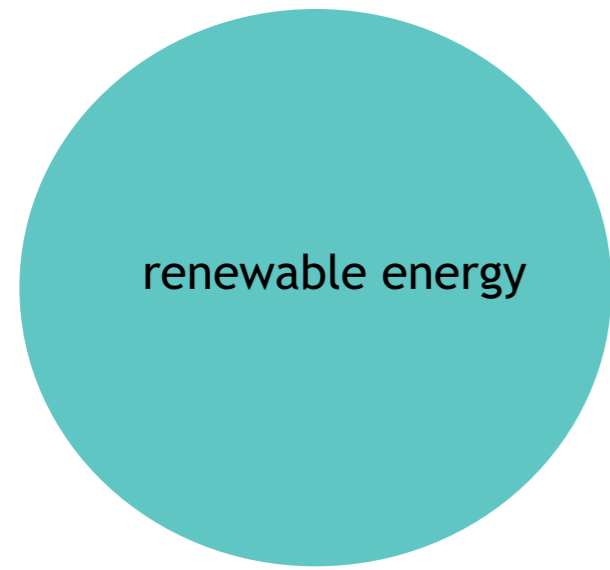
energy efficiency

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new and refurbished buildings, energy storage, district heating, smart grids, appliances and products

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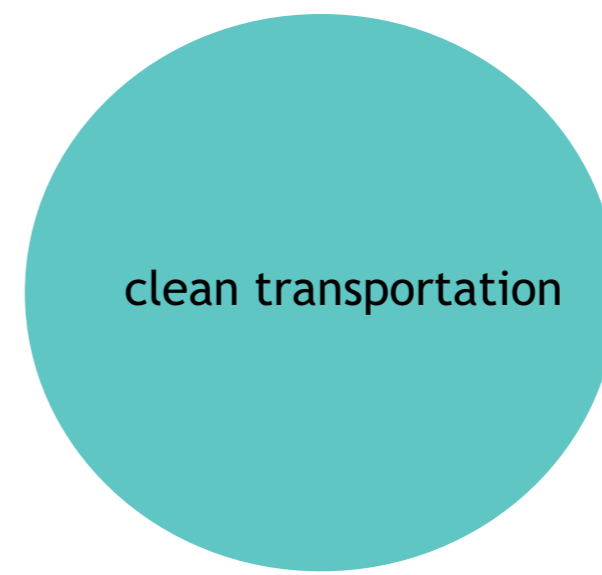
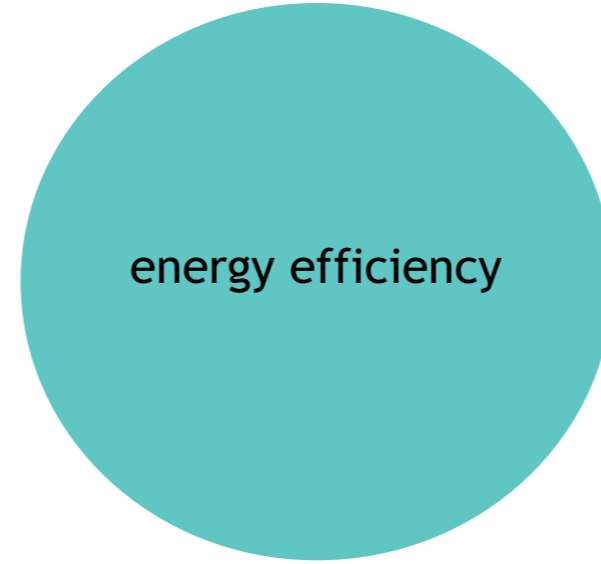
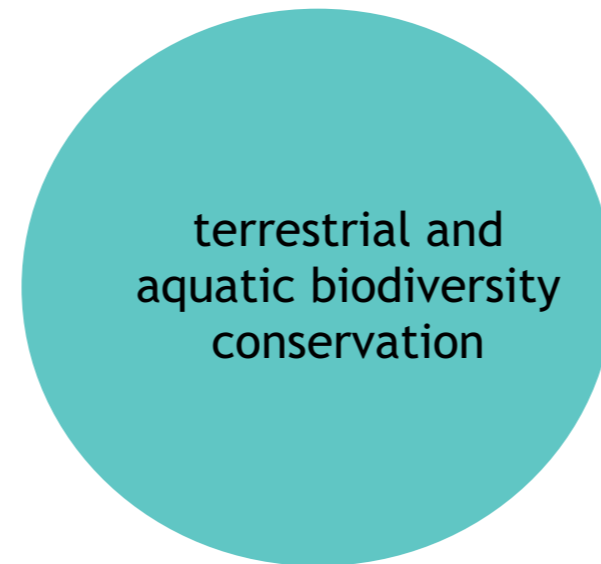
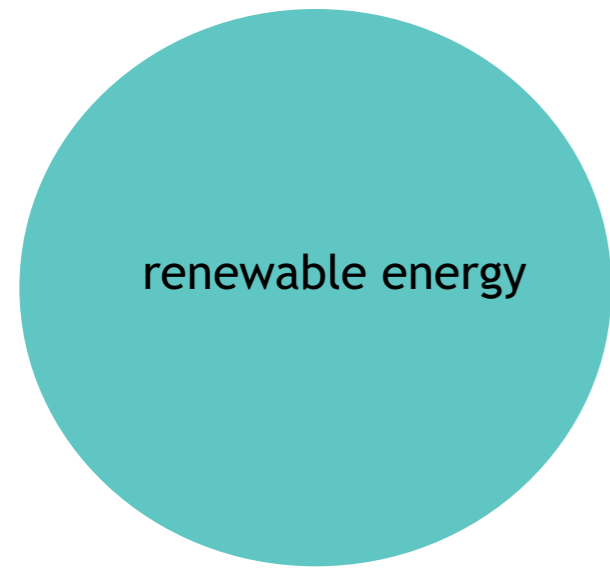


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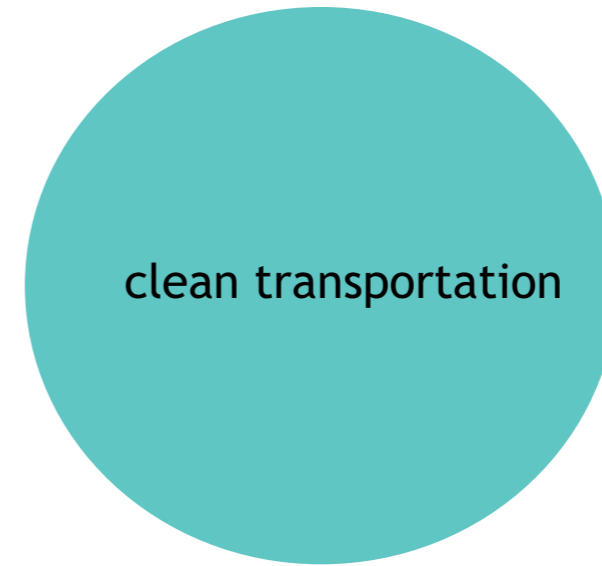
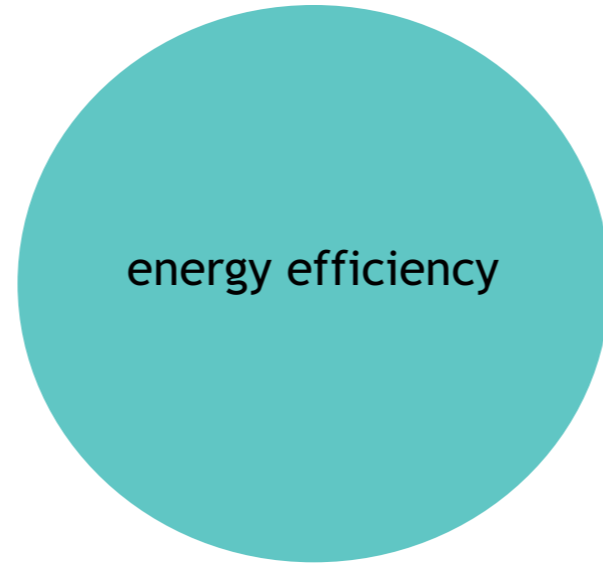
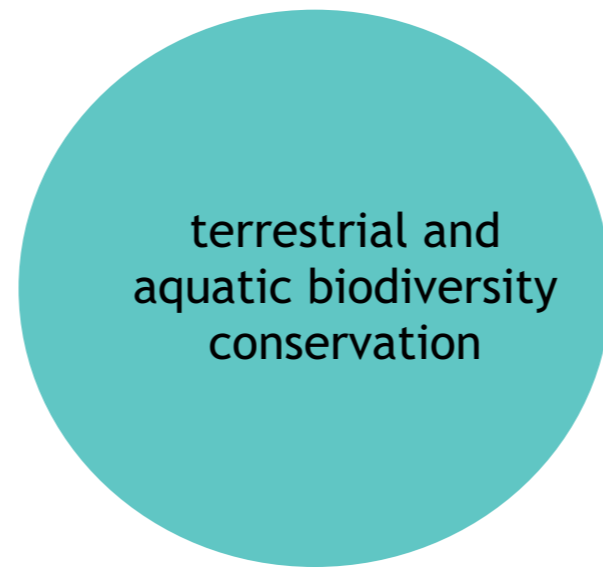
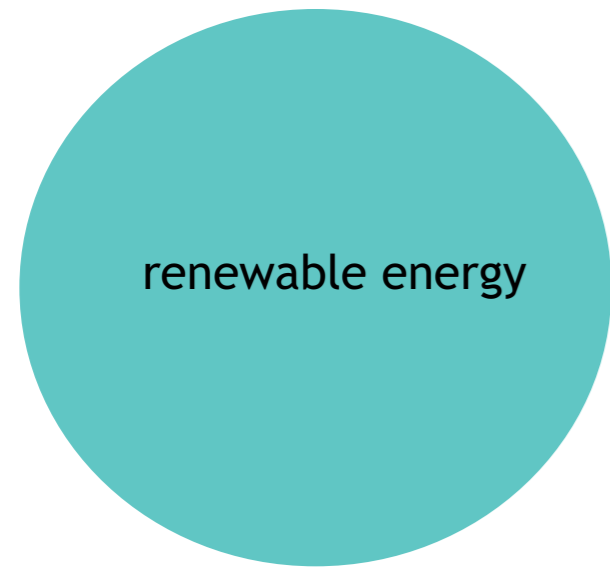


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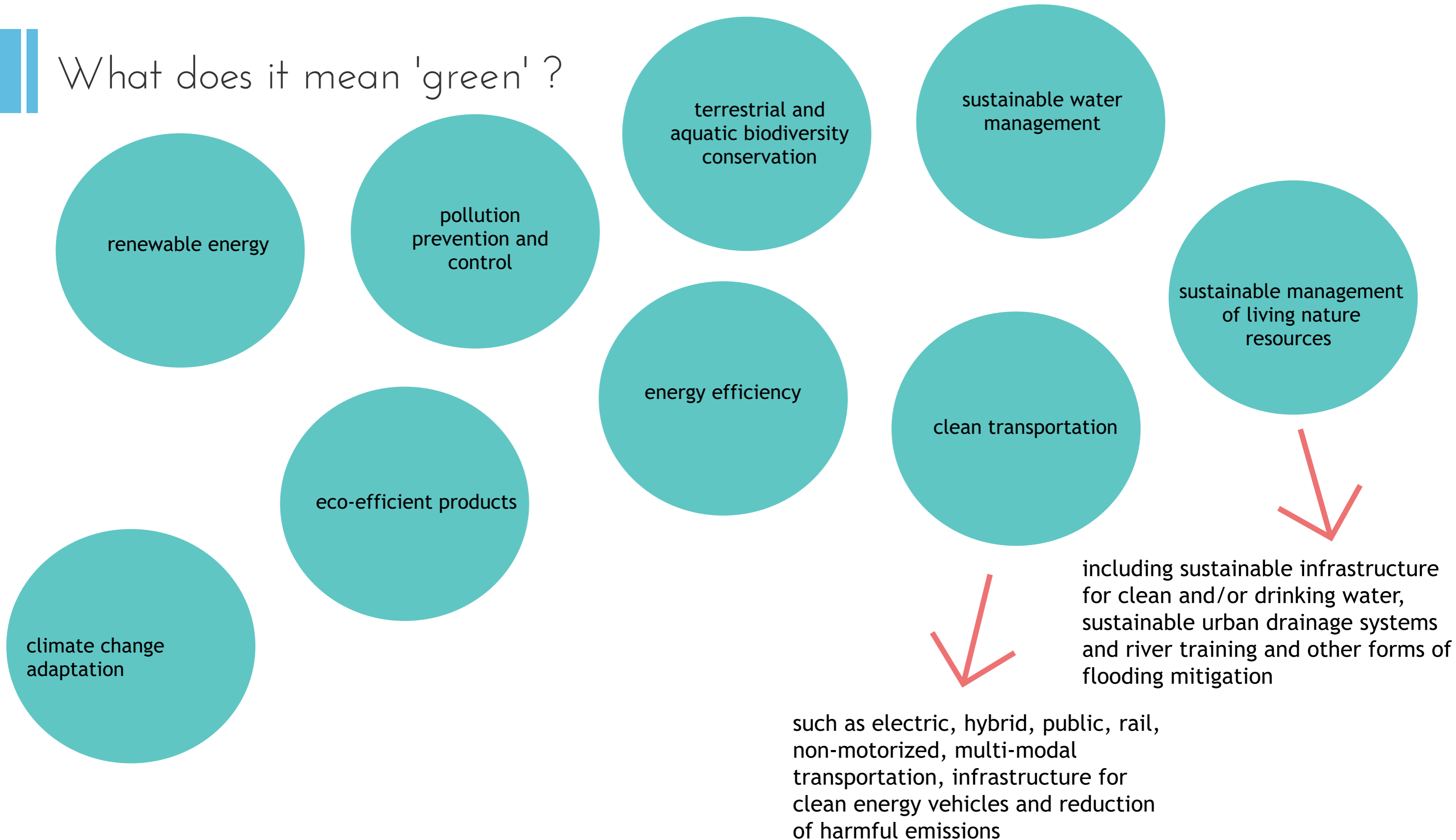
development and introduction of environmentally friendlier, eco labelled or certified products, resource efficient packaging and distribution

new and refurbished buildings, energy storage, district heating, smart grids, appliances and products

such as electric, hybrid, public, rail, non-motorized, multi-modal transportation, infrastructure for clean energy vehicles and reduction of harmful emissions

including sustainable infrastructure for clean and/or drinking water, sustainable urban drainage systems and river training and other forms of flooding mitigation

What does it mean 'green' ?



What does it mean 'green' ?

renewable energy

pollution prevention and control

terrestrial and aquatic biodiversity conservation

sustainable water management

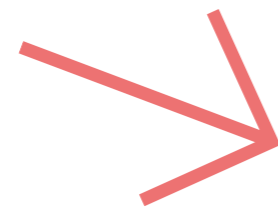
sustainable management of living nature resources

energy efficiency

clean transportation

eco-efficient products

climate change adaptation

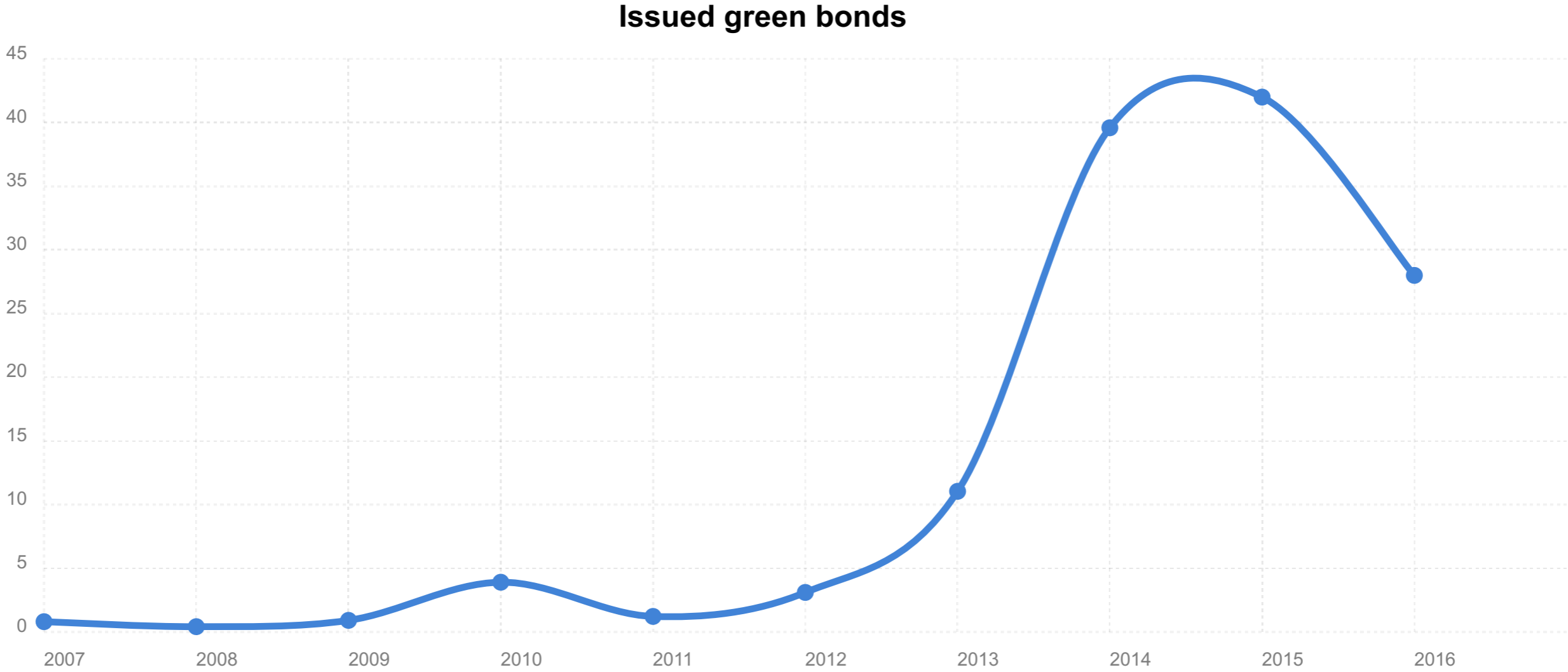


including information support systems, such as climate observation and early warning system



Labelled Green Bond Issuance

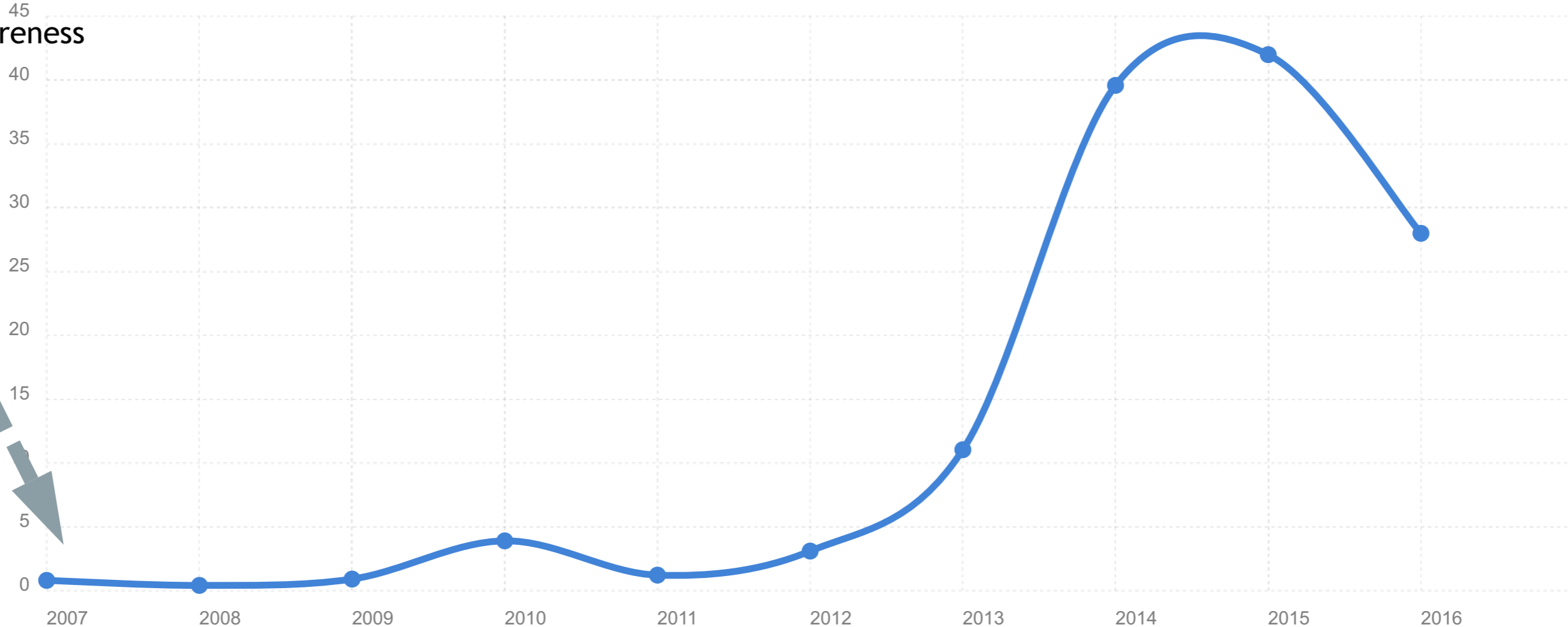
Labelled Green Bond Issuance



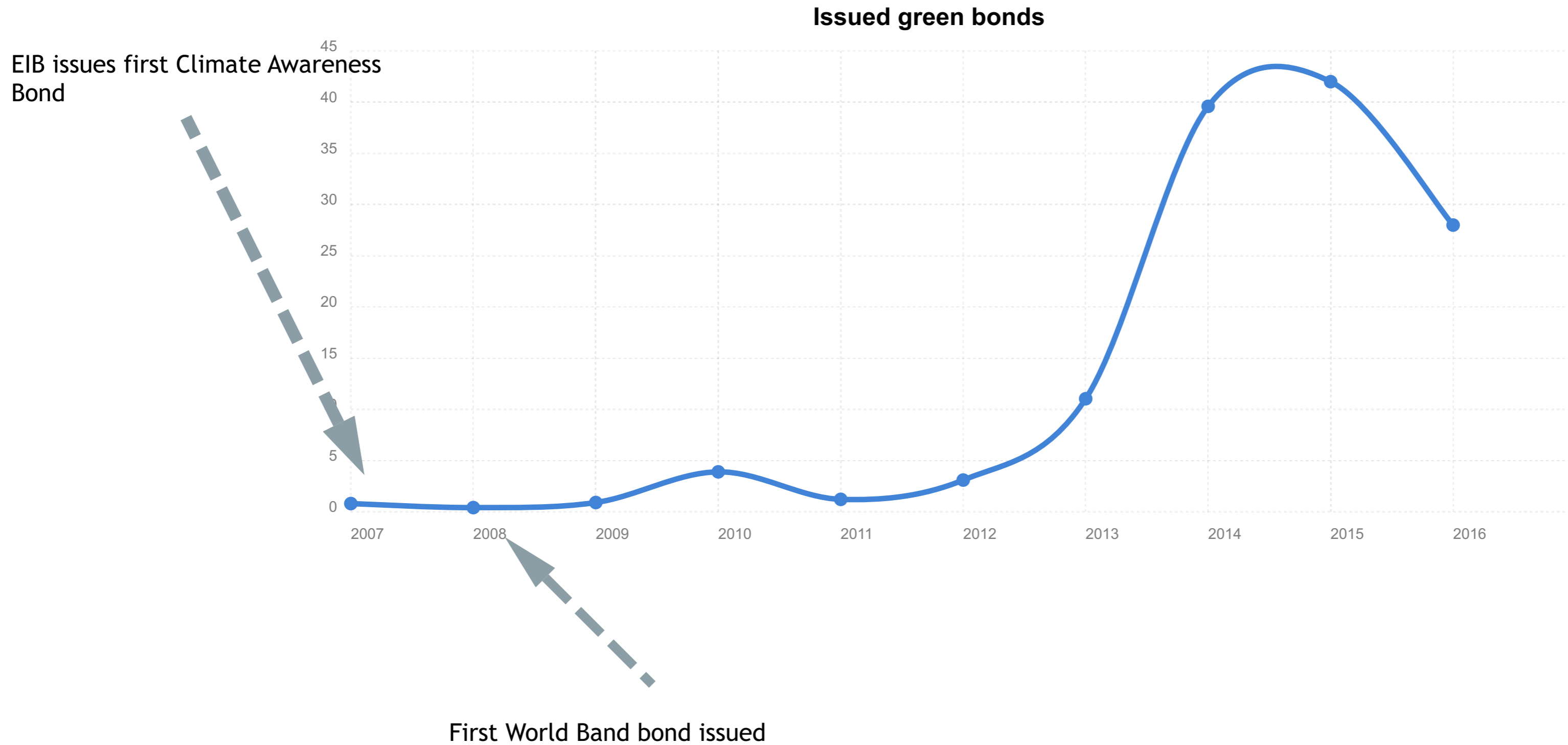
Labelled Green Bond Issuance

EIB issues first Climate Awareness Bond

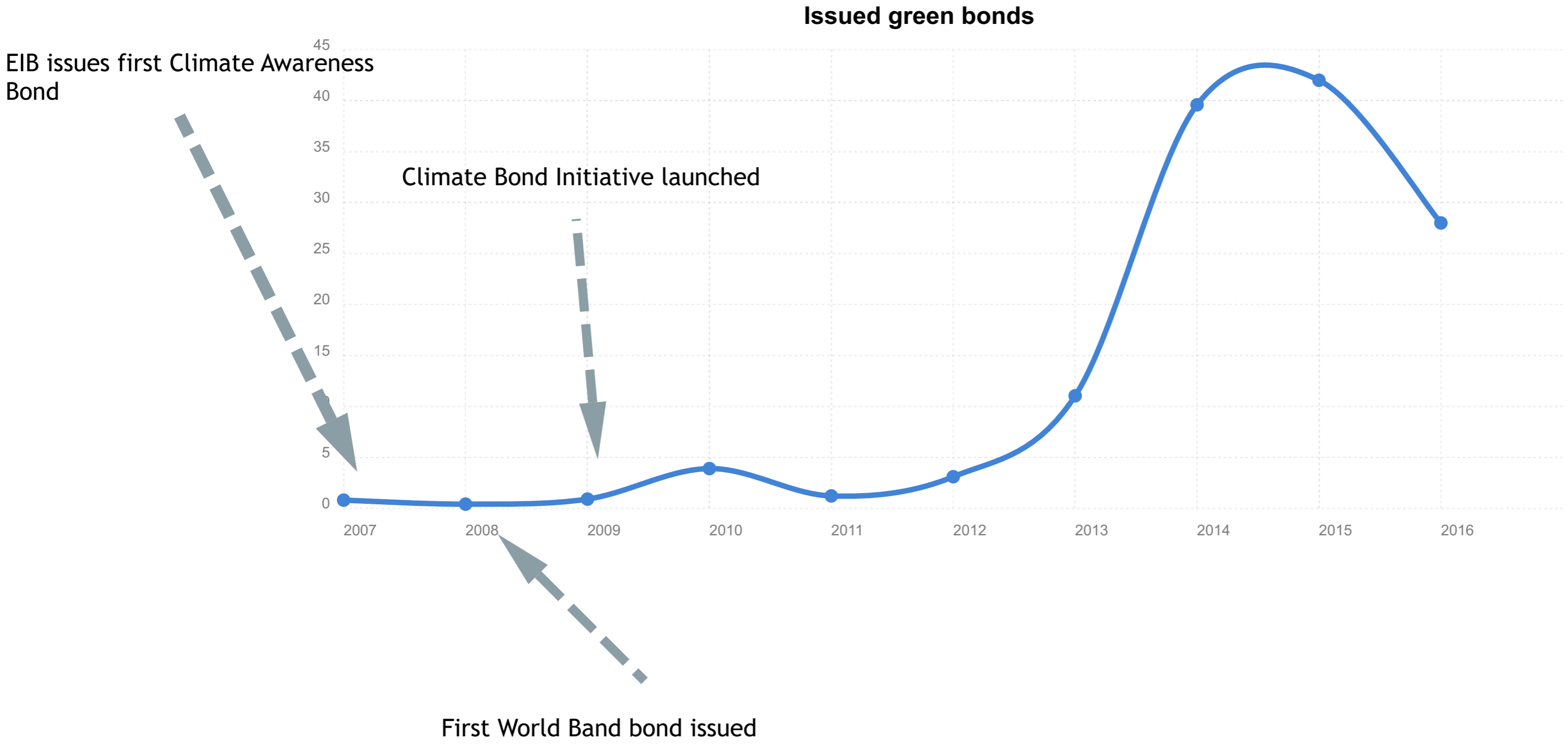
Issued green bonds



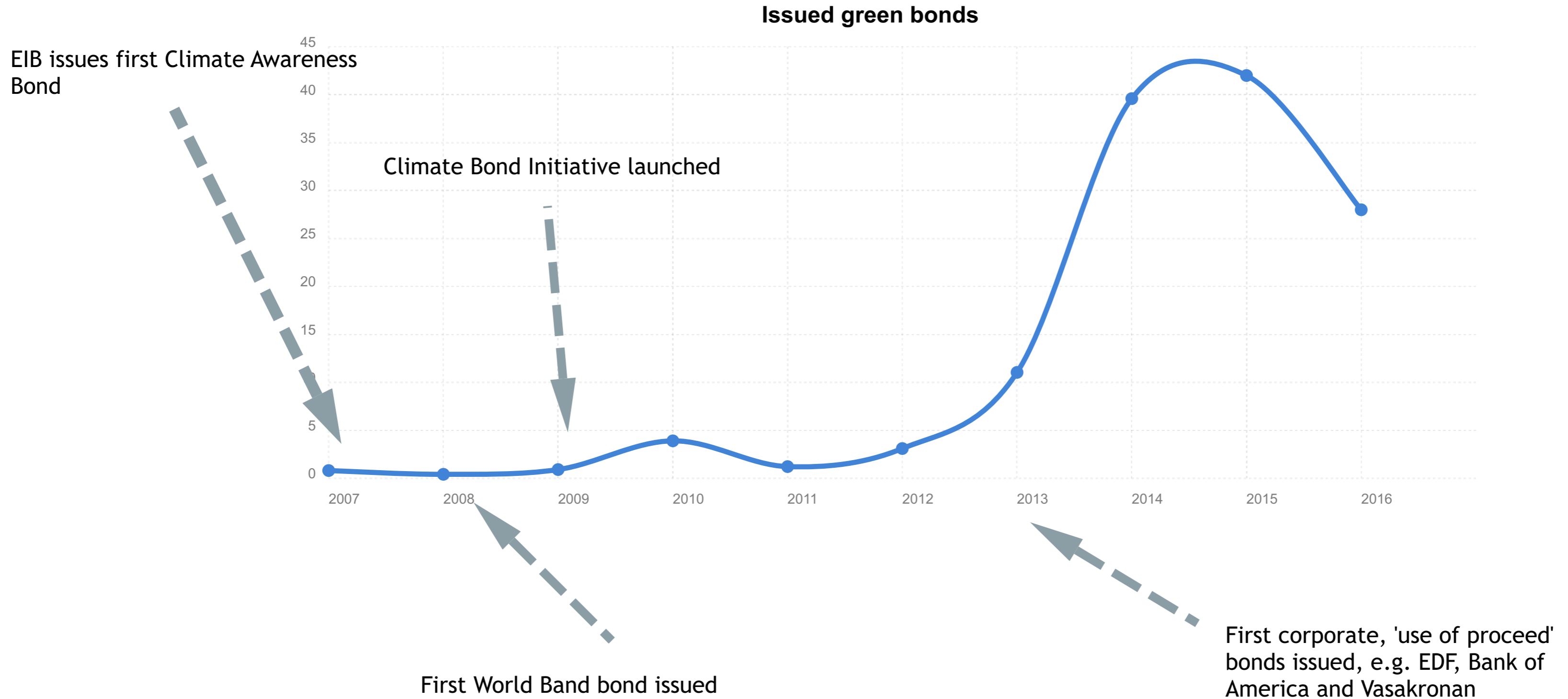
Labelled Green Bond Issuance



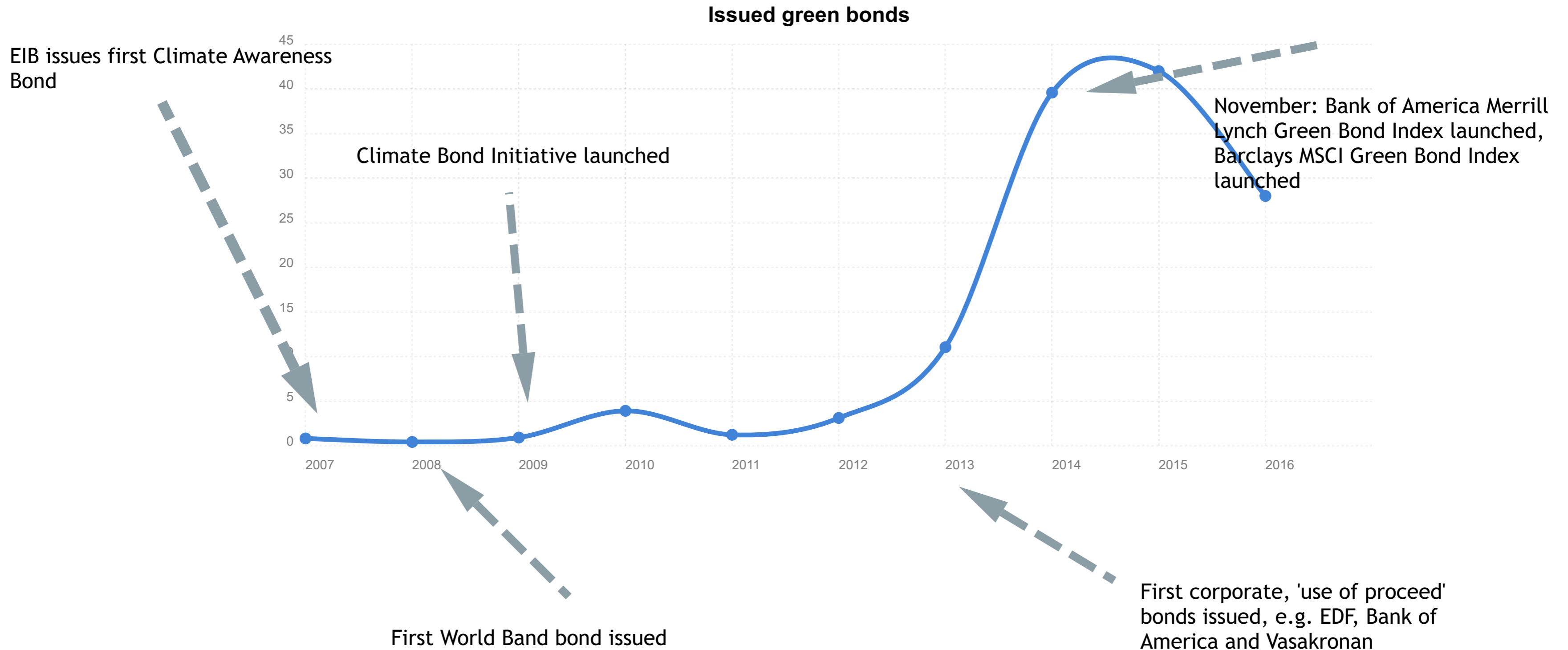
Labelled Green Bond Issuance



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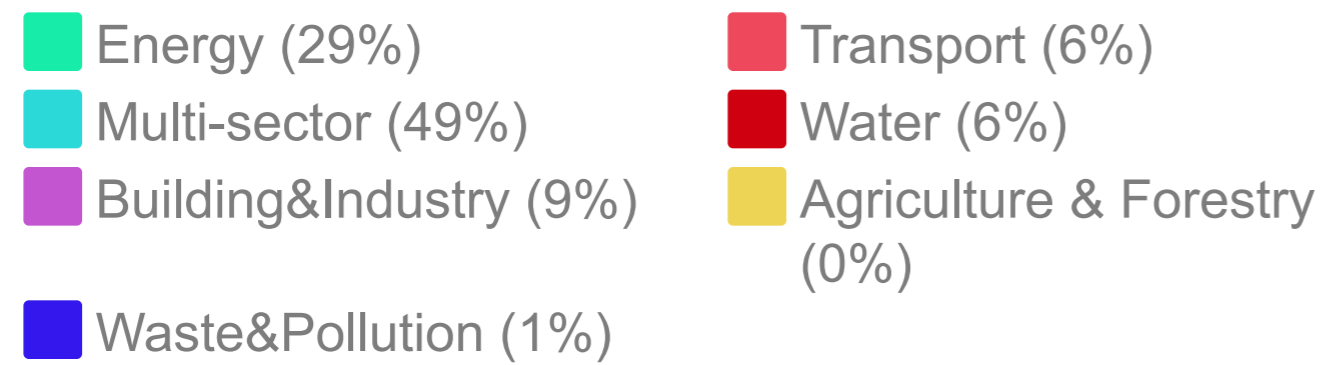
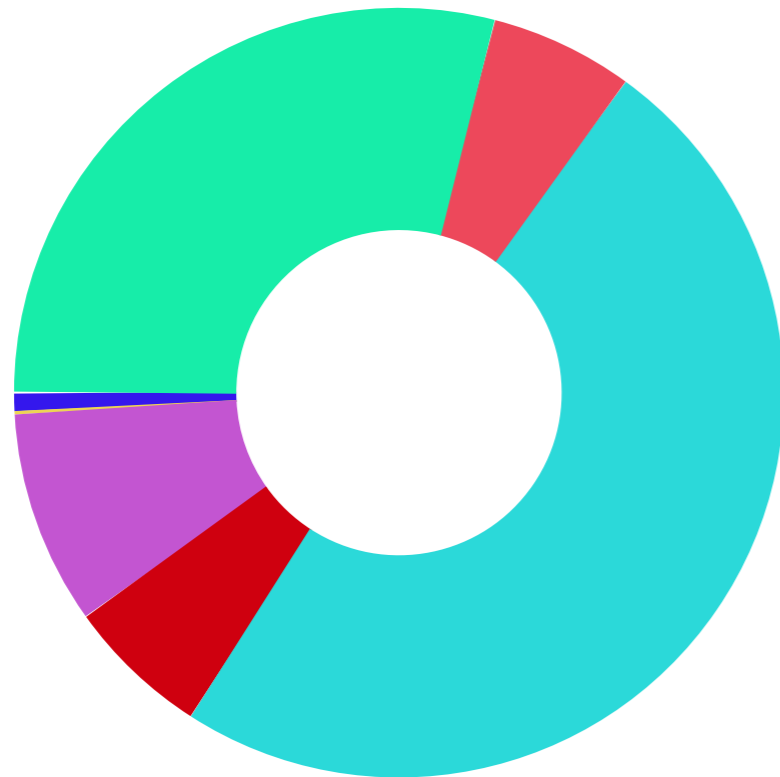


Labelled Green Bond Issuance



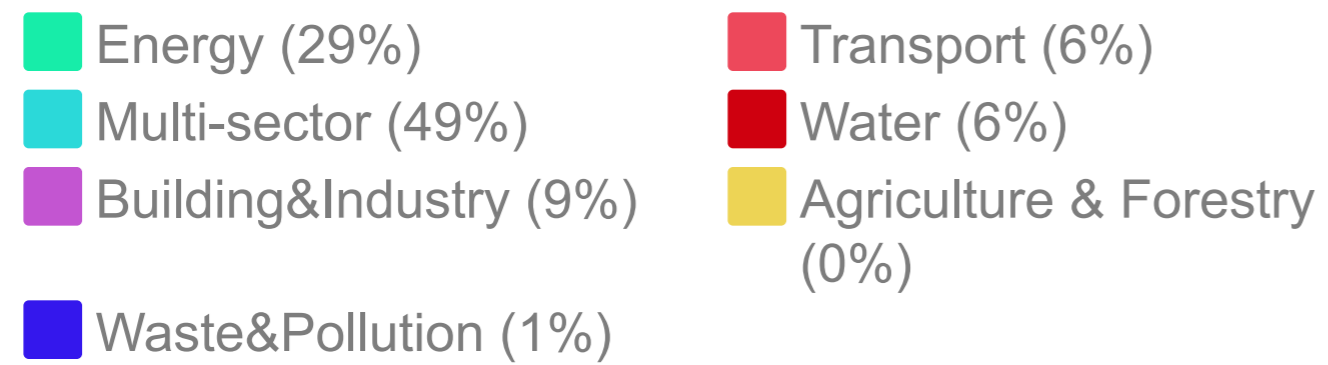
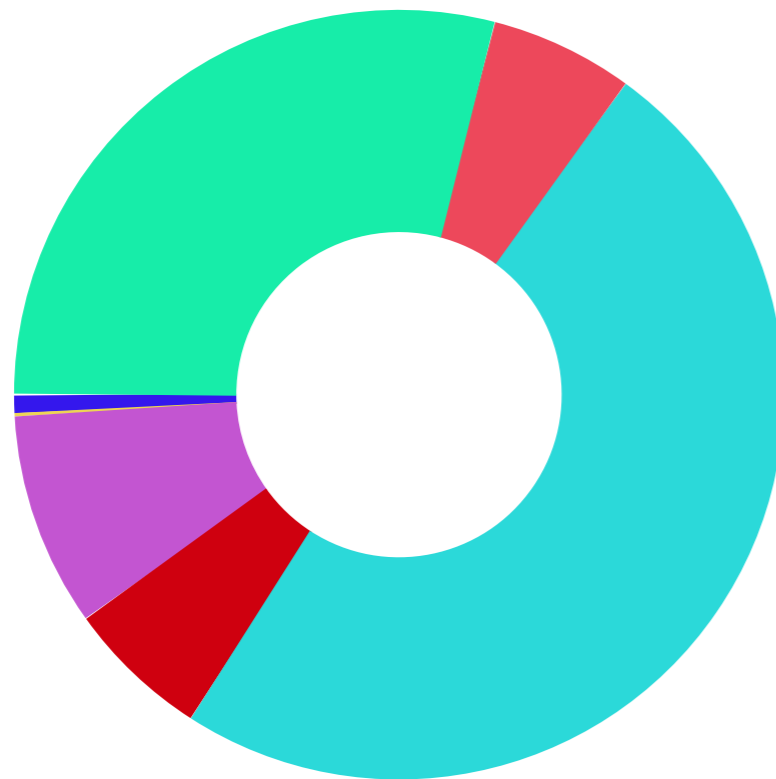
Labeled Green Bonds Market

Sector Division
Outstanding bonds

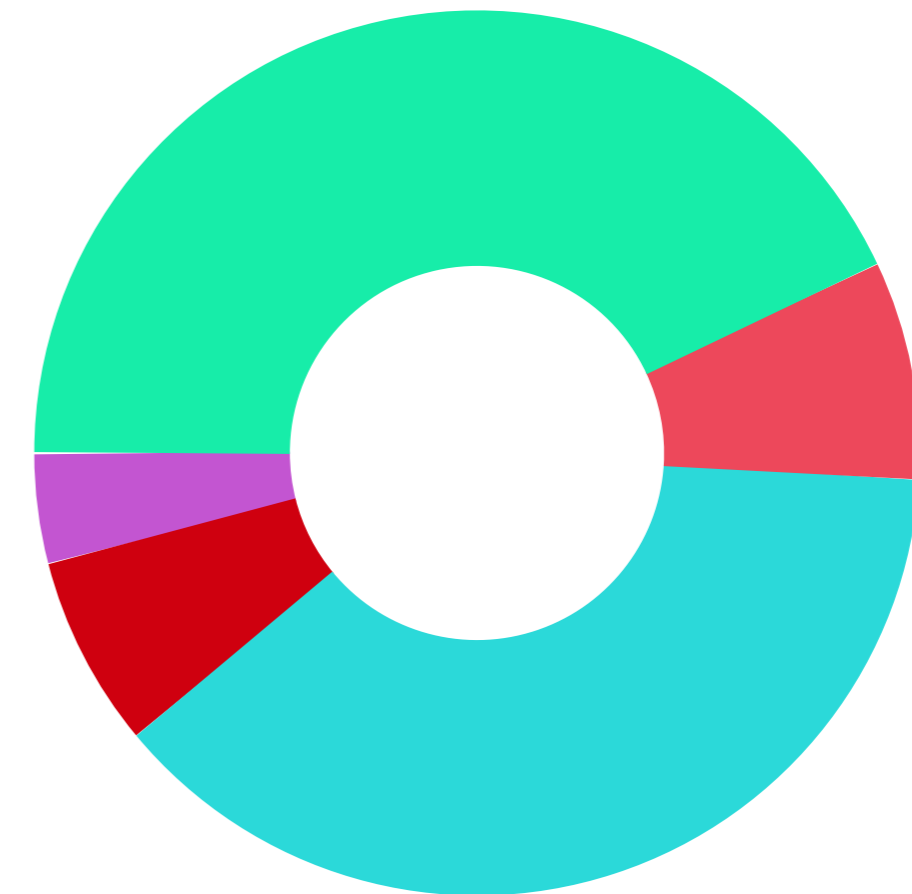


Labeled Green Bonds Market

Sector Division
Outstanding bonds



Currency Division
Outstanding bonds

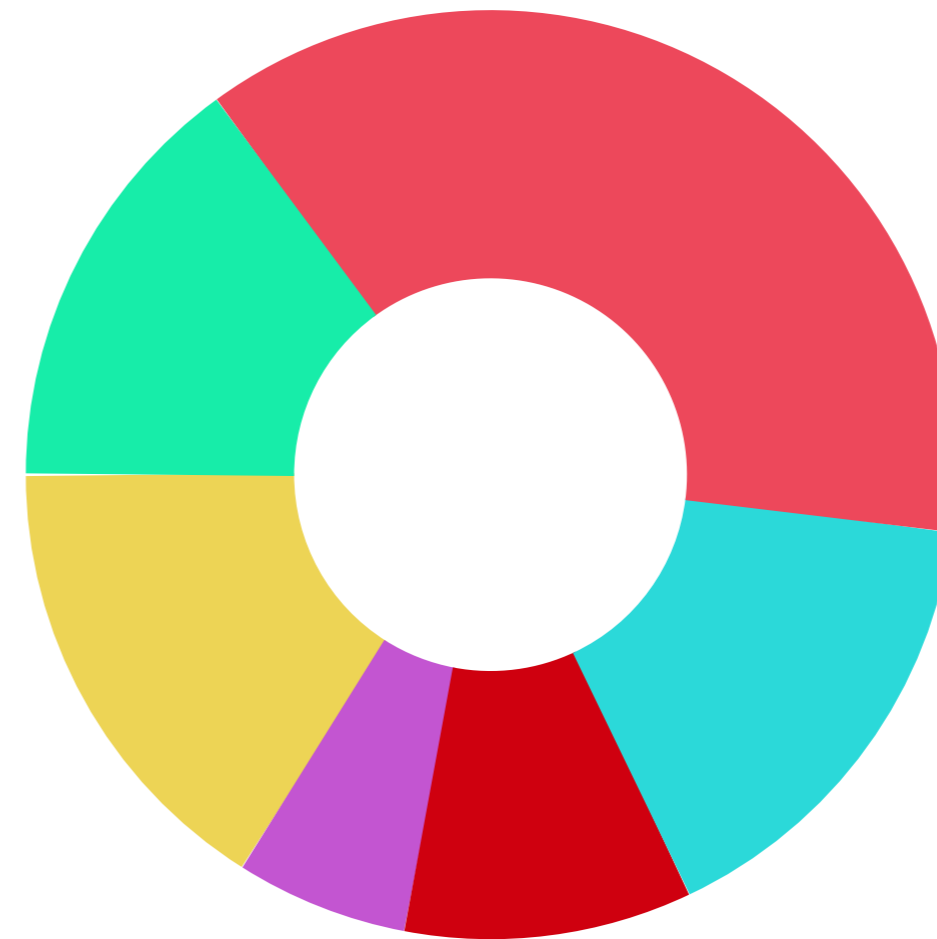


Credit Rating : Labelled vs Unlabelled

Labelled green bond



Unlabelled green bond





Green bond as a standard bond with a bonus
feature



Green bond as a standard bond with a bonus
feature

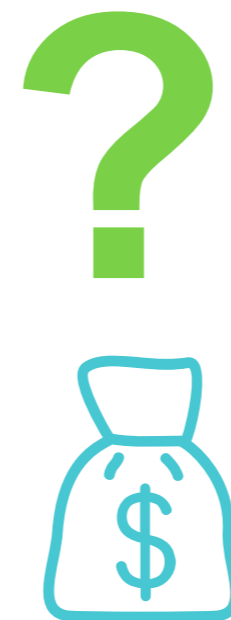
Company A

Green bond as a standard bond with a bonus feature



Company A

Green bond as a standard bond with a bonus feature



Company A

Green bond as a standard bond with a bonus feature



Bank



Company A

Green bond as a standard bond with a bonus feature



Bank



fees



Company A

Green bond as a standard bond with a bonus feature

Investors



Bank



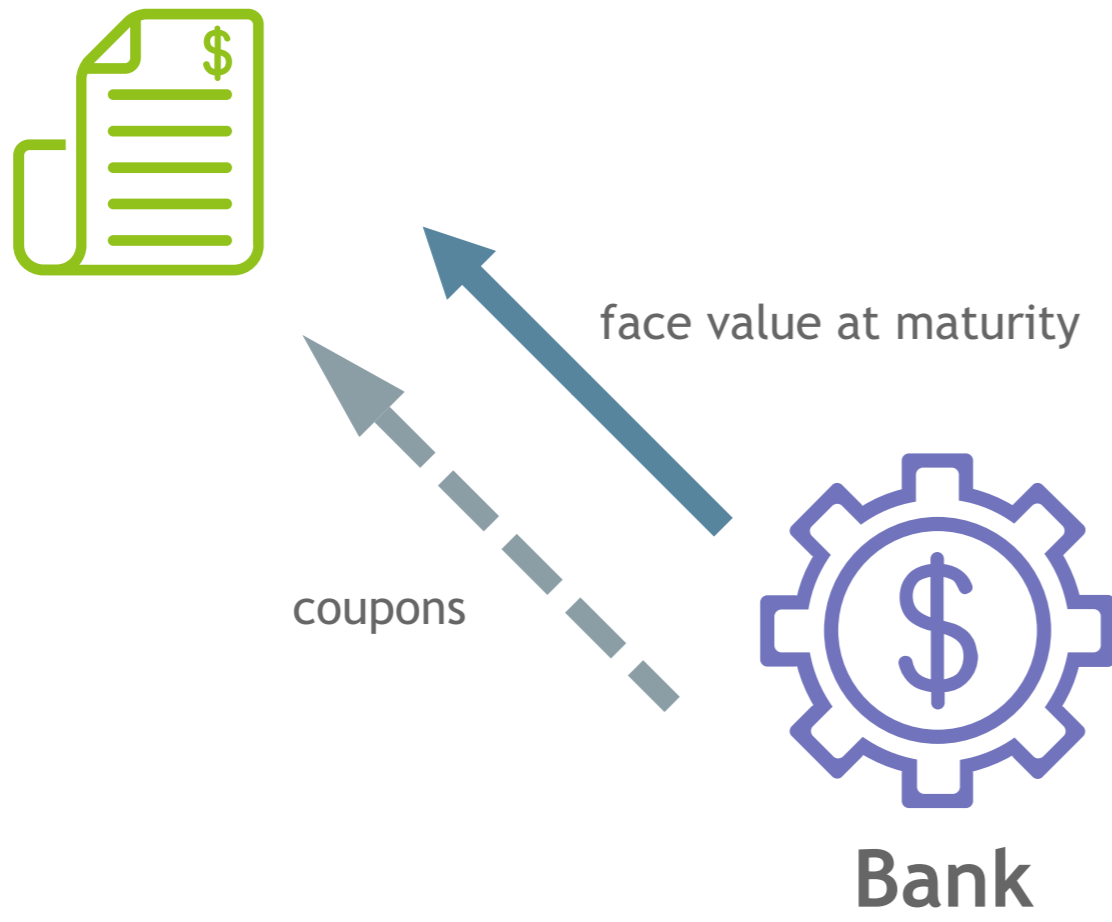
fees

Company A



Green bond as a standard bond with a bonus feature

Investors, bondholders



Company A



Types of green bonds

Types of green bonds

Green 'Use of Proceeds' Bond

- proceeds are earmarked for green projects
- full re-course to the issuer
- credit ranking of issuer applies
- example: EIB
'Climate Awareness Bond, backed by EIB'

Types of green bonds

Green "Use of Proceeds" Bond

Green "Use of Proceeds" Revenue Bond

- proceeds are earmarked for green projects
 - full re-course to the issuer
 - credit ranking of issuer applies
 - example: EIB
'Climate Awareness Bond, backed by EIB'
- proceeds are earmarked for green projects
 - revenue streams from the issuers through fees, taxes etc are collateral for the debt
 - example: Hawaii State, backed by fees and electricity bills of the state utilities

Types of green bonds

Green "Use of Proceeds" Bond

Green "Use of Proceeds" Revenue Bond

Green Project Bond

- proceeds are earmarked for green projects
 - full re-course to the issuer
 - credit ranking of issuer applies
 - example: EIB
'Climate Awareness Bond, backed by EIB'
- proceeds are earmarked for green projects
 - revenue streams from the issuers through fees, taxes etc are collateral for the debt
 - example: Hawaii State, backed by fees and electricity bills of the state utilities
- Ring-fenced for the specific underlying green project(s)
 - re-course is only up to project's assets and balance sheet
 - example: Alta Wind Holding, backed by the Alta Wind project

Types of green bonds

Green "Use of Proceeds" Bond

Green "Use of Proceeds" Revenue Bond

Green Project Bond

Green Securitized Bond

- proceeds are earmarked for green projects
 - full re-course to the issuer
 - credit ranking of issuer applies
 - example: EIB
'Climate Awareness Bond, backed by EIB'
- proceeds are earmarked for green projects
 - revenue streams from the issuers through fees, taxes etc are collateral for the debt
 - example: Hawaii State, backed by fees and electricity bills of the state utilities
- Ring-fenced for the specific underlying green project(s)
 - re-course is only up to project's assets and balance sheet
 - example: Alta Wind Holding, backed by the Alta Wind project
- either earmarked for green project or go directly to underlying green projects
 - re-course is to the group of projects that have been grouped together
 - example: Solar City, backed by residential solar leases

Green Bonds Indexes

Green Bonds indexes are designed to track a dynamic of global green bond market

1. S&P Green Bond Index

- launched in 2014
- bonds flagged as 'green' by Climate Bonds Initiative
- excluded: bills, STRIPS, inflation-linked
- bid price based on Thomson Reuters and S&P Securities Evaluations (SPSE).
- Index is weighted by market value
- aggregating the interest returns and price returns



Green Bonds Indexes

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2. Barclays MSCI Green Bond Index

- launched in 2014
- green evaluation of bonds by MSCI ESG
Research to identify green bonds from the broader universe of self-labeled green securities
- applies fixed income criteria as an index rule (tax-exempt securities are not included, fixed minimum issues sizes)
- credit quality rating of Baa3/BBB- or higher, using the middle rating of Moody's, Fitch, and S&P. G
- fixed rate security only
- Inflation-linked, convertible and government securities are ineligible for the Green Bond Index.
- Retail bonds, private placements and bonds without a third-party pricing source are also ineligible
- valuation coincide with core index rules and mechanics applied to Barclays' flagship aggregate indices

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2. BofA Merrill Lynch Green Bond Index