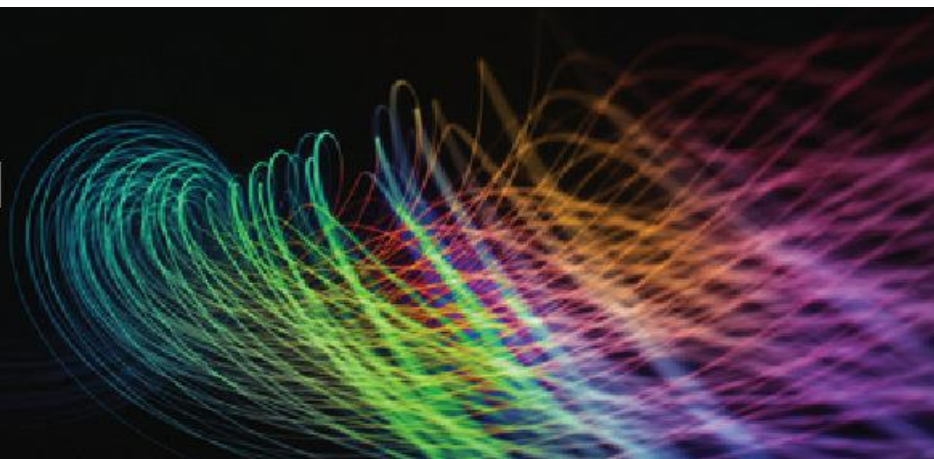




25<sup>ο</sup> Εθνικό Συνέδριο Ενέργειας

**ΕΝΕΡΓΕΙΑ+ΑΝΑΠΤΥΞΗ**

1-2 Δεκεμβρίου 2021



**Green  
Bonds**

**“Energy Investment needs and Green Bonds as a Financing Tool in Promoting Clean Fuels”**

**INSTITUTE OF ENERGY  
FOR SOUTH EAST EUROPE**

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Chemical Engineer MSc/MBA*

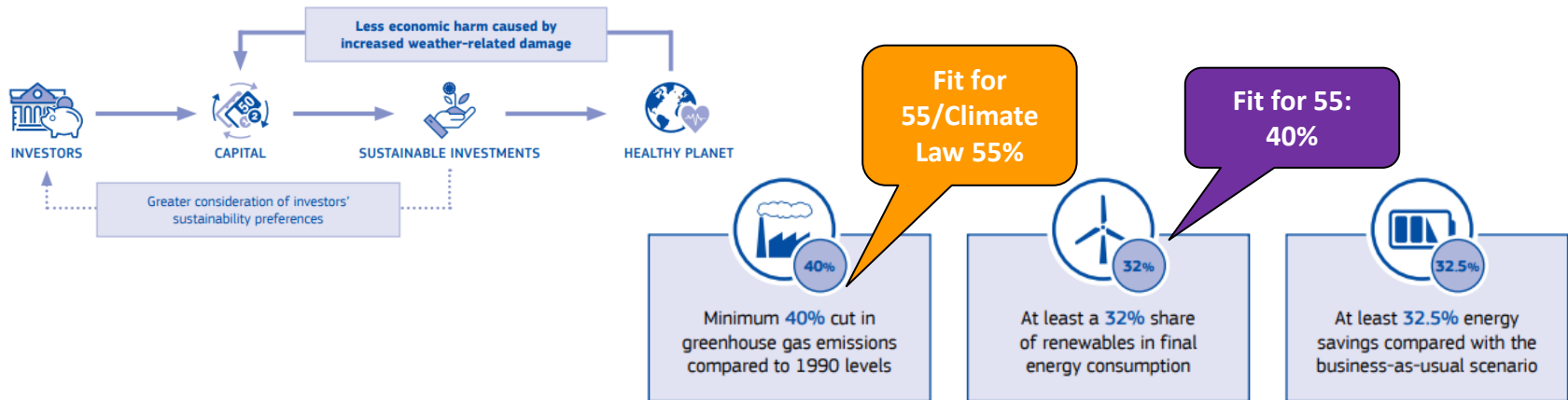


# A Road to Sustainable Finance

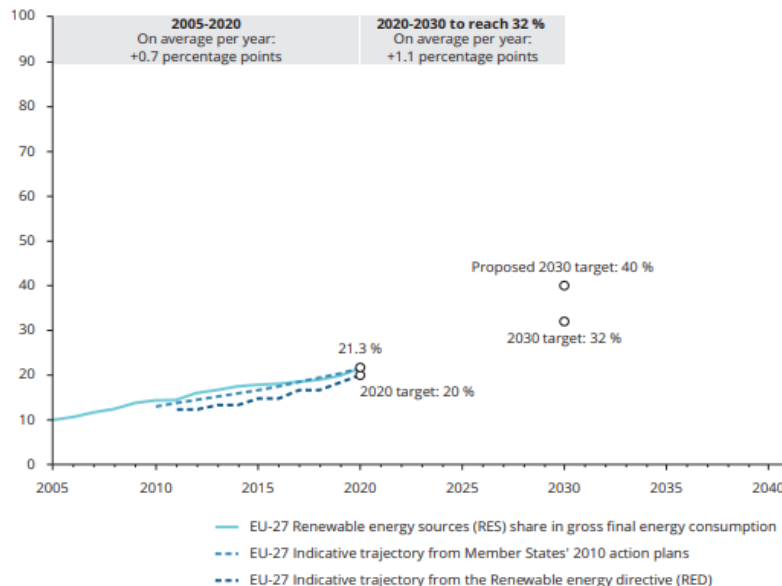
- ❑ In December 2015 the United Nations Framework Convention on Climate Change (UNFCCC) established the **Paris Climate Agreement**, considered as a landmark in global efforts to tackle climate change.
- ❑ The agreement sets the ambitious target of limiting the rise in global warming to well below 2°C compared to pre-industrial levels by the end of the century (Art. 2.1(a)), which would require massive reductions in CO2 emissions in the next decades.
- ❑ At the same time, the Agreement recognizes the role of financing de-carbonization by putting forward a commitment to **"making finance flows consistent with a pathway towards low Greenhouse Gas emissions and climate-resilient development"** (Art. 2.1(c)).
- ❑ On 11 December 2019, the Commission presented the European green deal, a growth strategy aiming to make Europe the first climate-neutral continent by 2050.
- ❑ As part of the green deal, the Commission presented on 14 January 2020 the European green deal investment plan, which will mobilise at **least €1 trillion of sustainable investments** over the next decade. It will create the right environment – or ‘enabling framework’ – to facilitate and stimulate the public and private investments needed for the transition to a climate-neutral, green, competitive and inclusive economy.
- ❑ The Commission presented on 17 September 2020 its 2030 climate target plan, with an increased **emissions reduction target of 55% by 2030 as compared to 1990**. The EU needs to invest approximately **350 billion euro more every year during the 2021-30** decade than it did during the previous decade, in order to meet these 2030 climate and energy targets.
- ❑ Commission has since 2018 been developing a comprehensive **policy agenda on sustainable finance**, comprising the action plan on financing sustainable growth and the development of a renewed sustainable finance strategy in the framework of the European green deal and the new strategy for financing the transition to a sustainable economy. The Commission is also coordinating international efforts through its International **platform on sustainable finance**.

# EU Goals and Sustainable Investment

Major investments are needed to transform the EU economy to deliver on climate, environmental and social sustainability goals, including the Paris Agreement and the UN Sustainable Development Goals (SDGs).



Percentage of RES share in gross final energy



- To reach these energy and climate goals by 2030, around **€180bn** in additional yearly funding will be needed.
- The European Investment Bank: end financing for fossil fuel energy projects by 2022, and unlock **€1 trillion** in investments in climate action and environmental sustainability in the decade to 2030.

**Fit for 55 targets:**  
**350 billion euro more** every year during the 2021-2030 decade than during the previous decade

Source: European Commission

**Greenwashing:** make something be "greener" than it really is.  
**Taxonomy Regulation 2020/852**

# Getting on Track

- More than three quarters of the effort to cut emissions in the next nine years falls to the power sector and to faster deployment of wind and solar PV.
- Another 14% is achieved with greater use of electricity in transport, in heating for buildings and in providing lower-temperature heat in industry.
- Greater recycling in steel, aluminum and plastics accounts for a 2% drop in emissions, greater building efficiency 0.5%, and growth of bioenergy for sustainable aviation fuel and shipping another 2%.



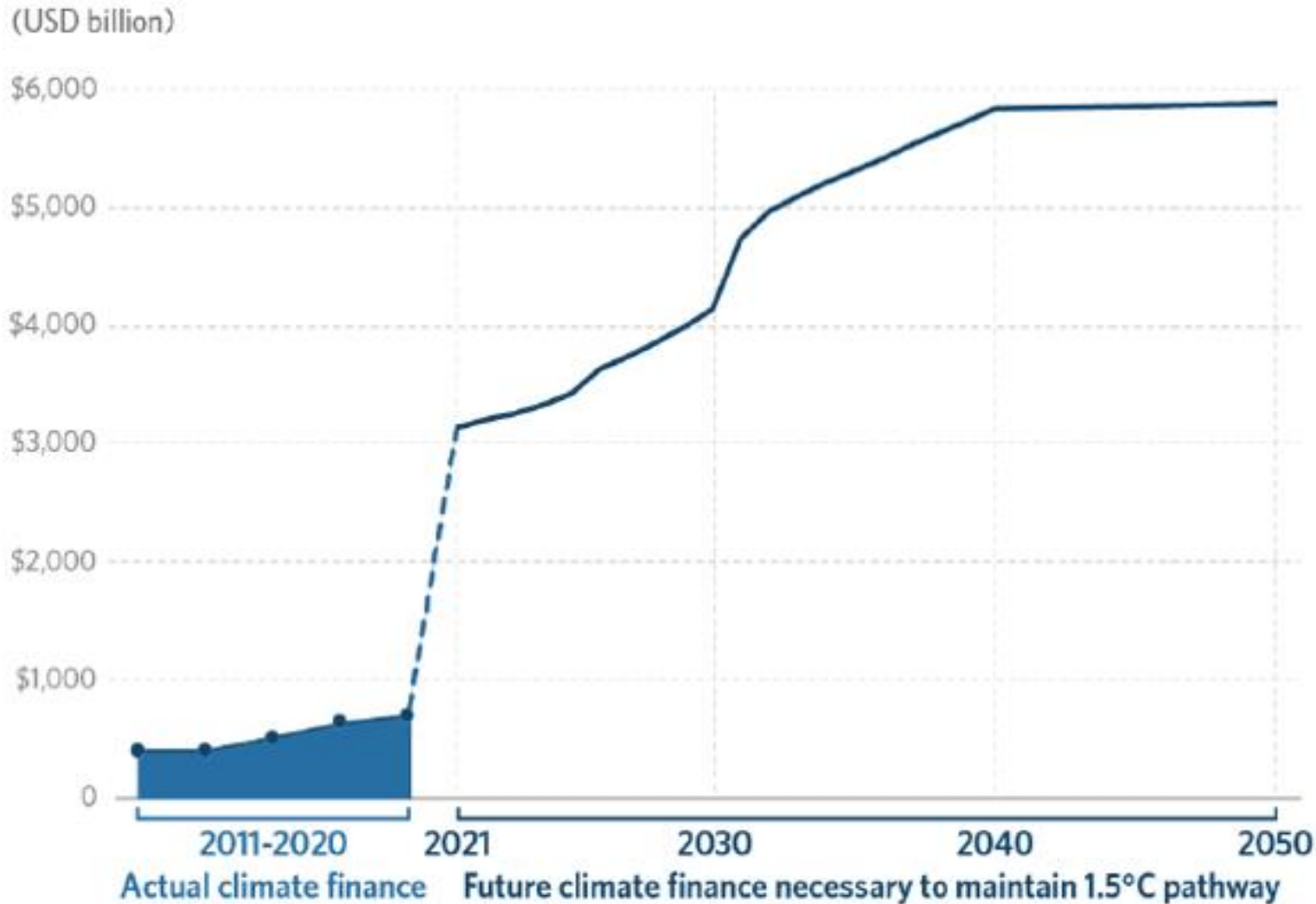
0.9%  
emissions  
increase a  
year, from  
2015 to  
2020.



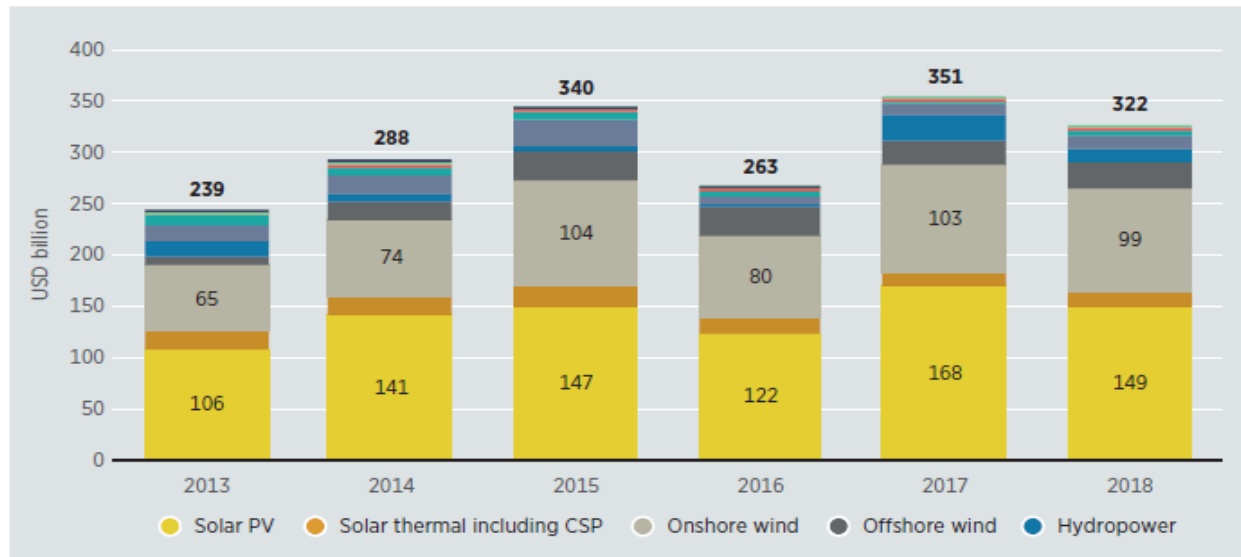
**1.400 GW renewables/year globally till 2050**

**Green Scenario:** Fossil fuels 10%, Renewables 85% and Nuclear 5% of primary energy in 2050

# Global Climate Finance Flows and Annual Investment Needs Through 2050

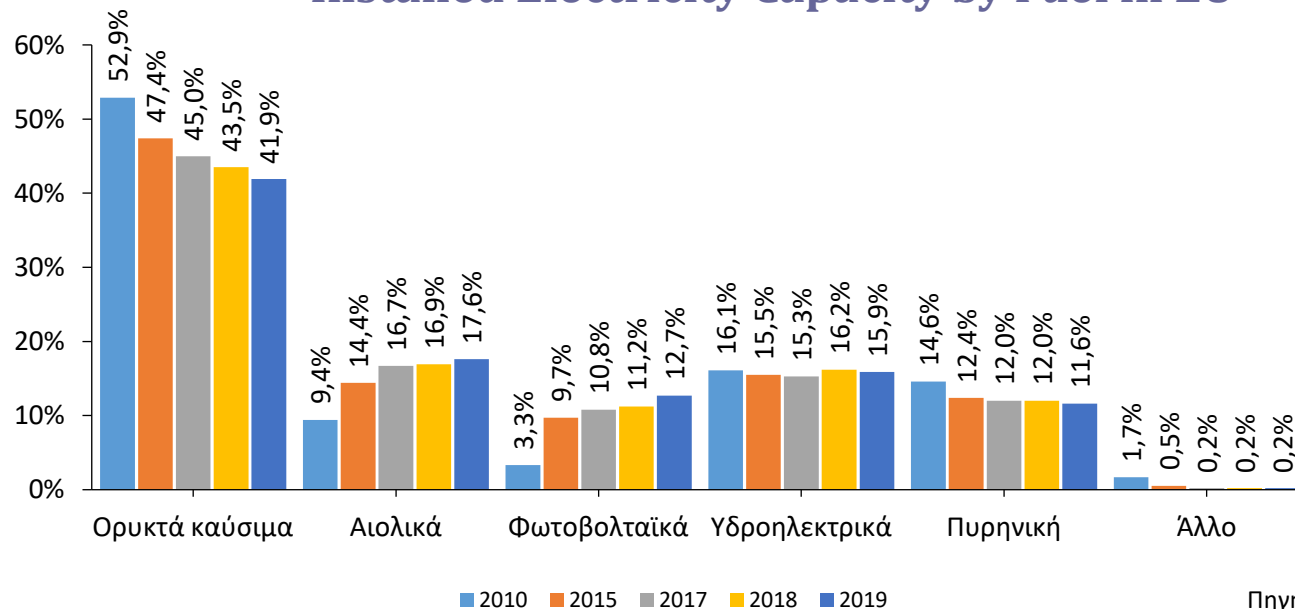


## Financing Renewables Globally



Πηγή: IRENA Global Landscape of Renewable Energy Finance 2020

## Installed Electricity Capacity by Fuel in EU



Πηγή: Eurostat

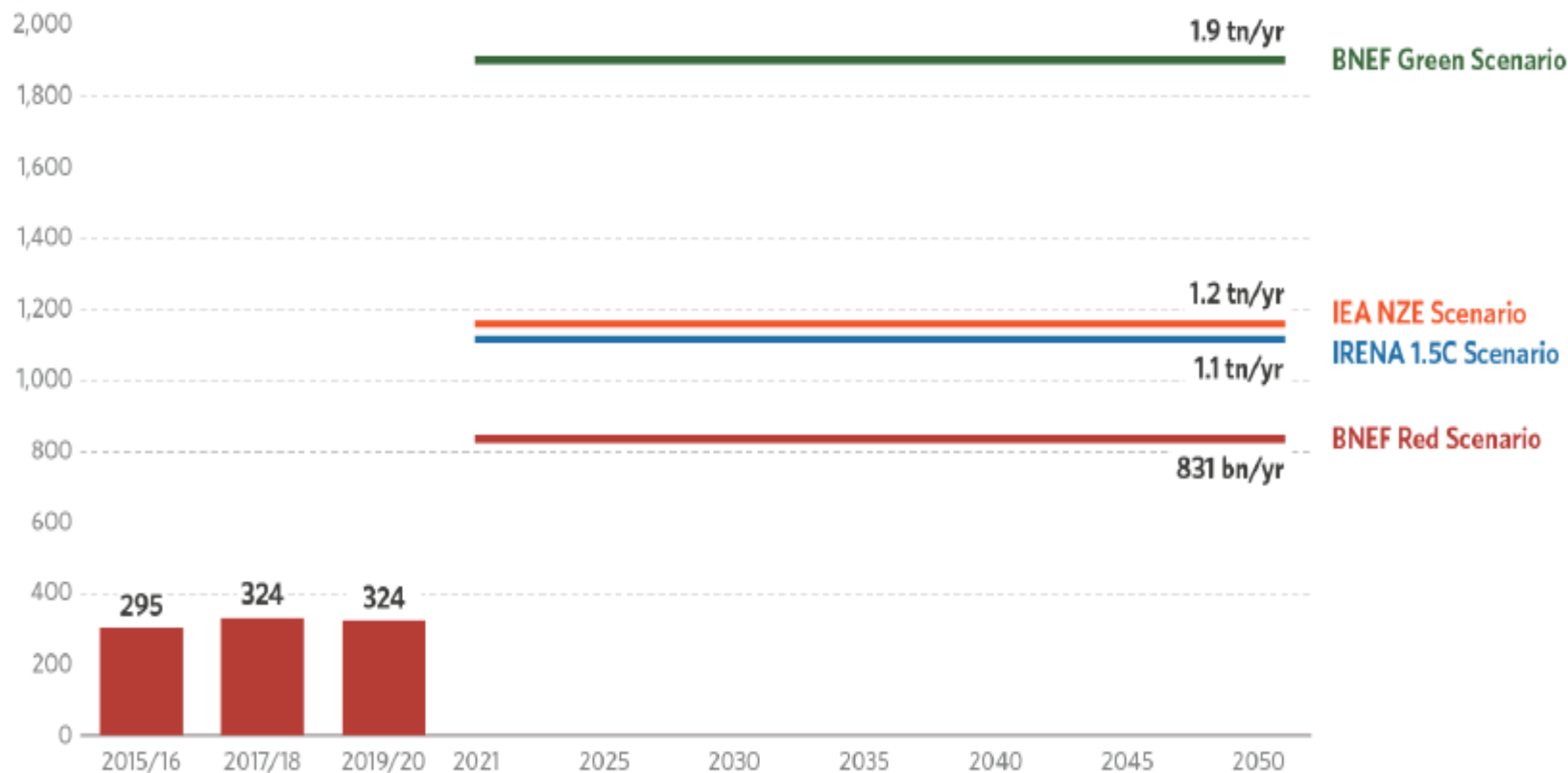


# Renewable Energy Investment Needs Globally



Annual renewable energy investments (2015-2020) vs investment needs through 2050

(USD billion)



# Green Bond Definitions



**International Capital Market Association (ICMA)** – A “green bond” is differentiated from a regular bond by its label, which signifies a commitment to exclusively use the funds raised to finance or re-finance “green” projects, assets or business activities.



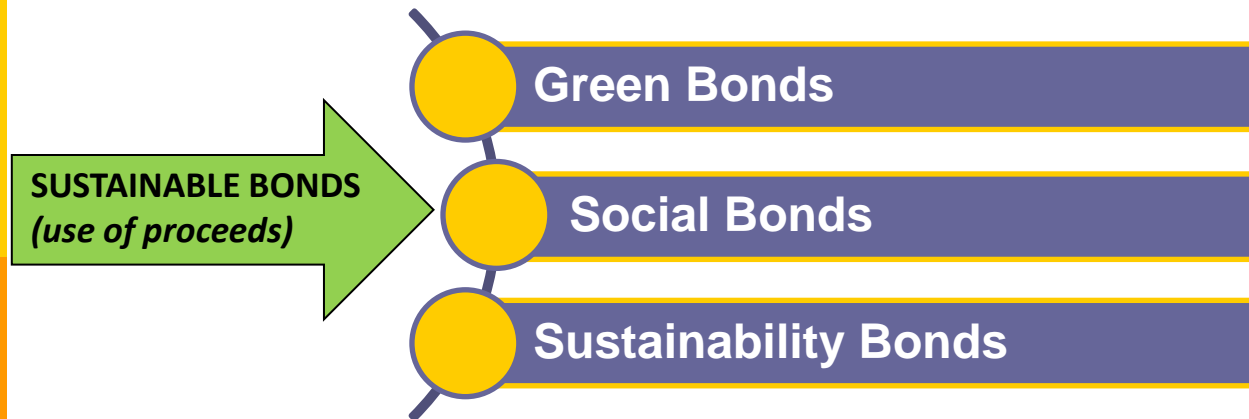
**The World Bank** – A green bond is a debt security that is issued to raise capital specifically to support climate – related or environmental projects.



**European Commission** – A Green Bond is any type of listed or unlisted bond or capital market debt instrument issued by a European or international issuer that is aligned with the European Union Green Bond Standard (EU GBS)



# Sustainable Bonds vs Sustainability Linked Bonds



**Green:** dedicated environmental benefits



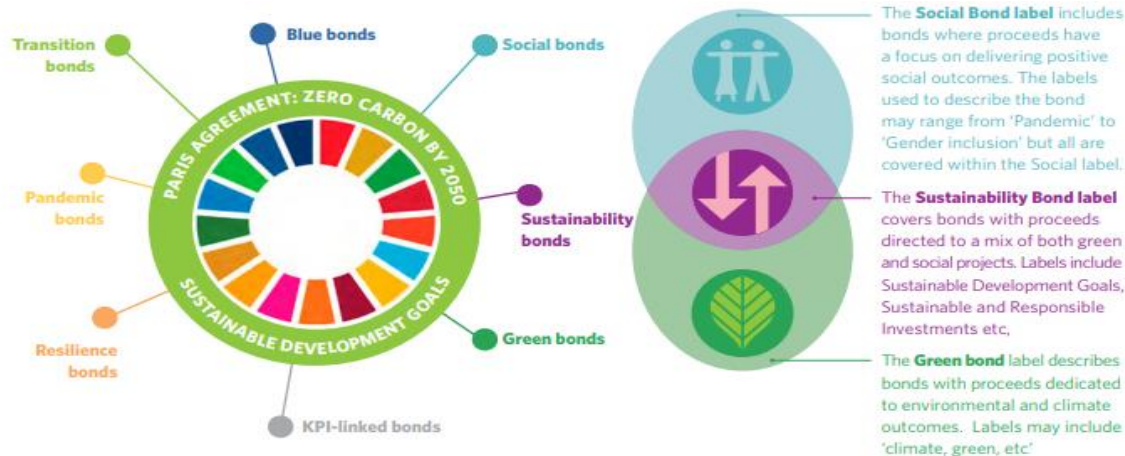
**Social:** dedicated social benefits



**Sustainability:** green and social benefits are combined into one instrument

Structurally linked to the issuer's achievement of climate goals or broader Sustainable Development Goals (SDG), such as through a covenant linking the coupon of a bond.

**Example: Public Power Corporation €650 million SLB**



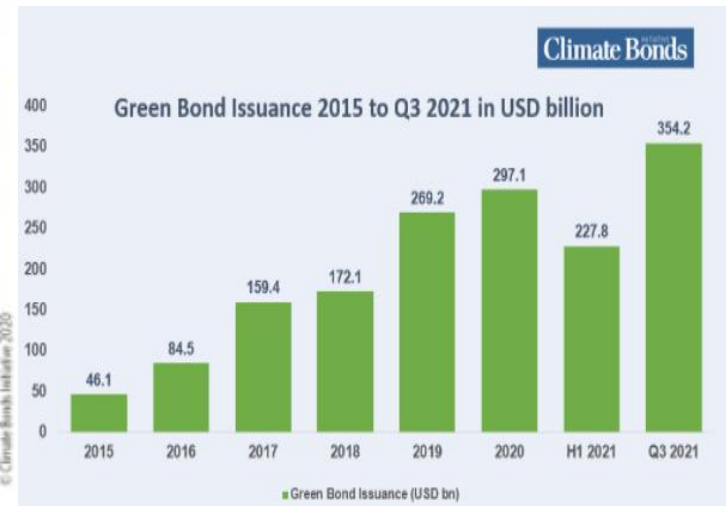
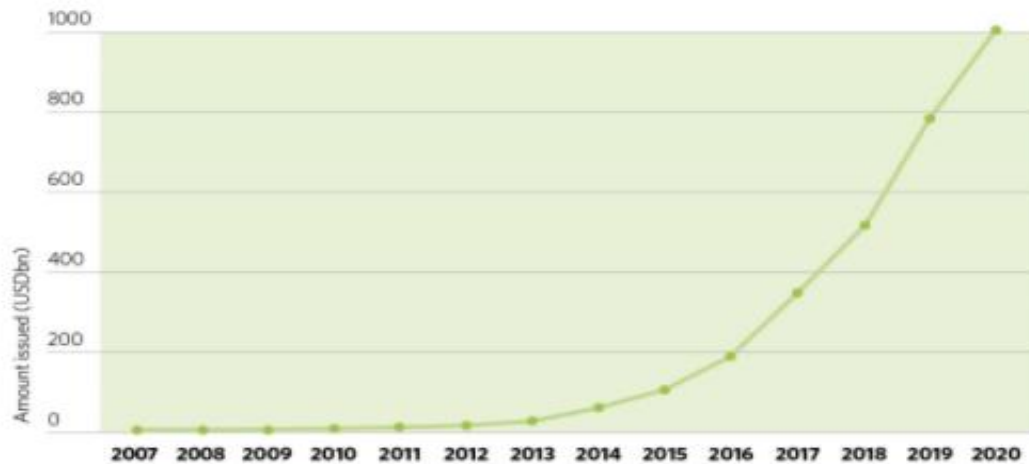
The **Social Bond label** includes bonds where proceeds have a focus on delivering positive social outcomes. The labels used to describe the bond may range from 'Pandemic' to 'Gender inclusion' but all are covered within the Social label.

The **Sustainability Bond label** covers bonds with proceeds directed to a mix of both green and social projects. Labels include Sustainable Development Goals, Sustainable and Responsible Investments etc.

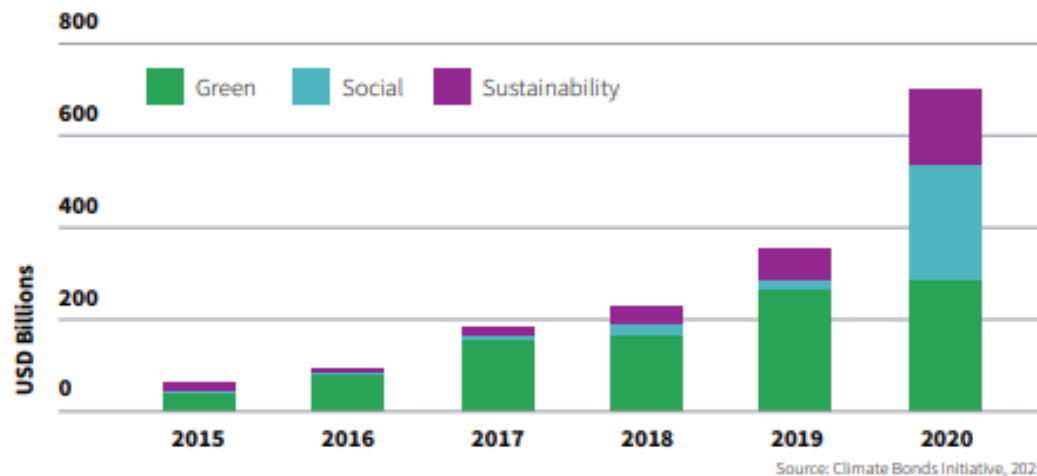
The **Green bond label** describes bonds with proceeds dedicated to environmental and climate outcomes. Labels may include 'climate, green, etc'

# Market Overview

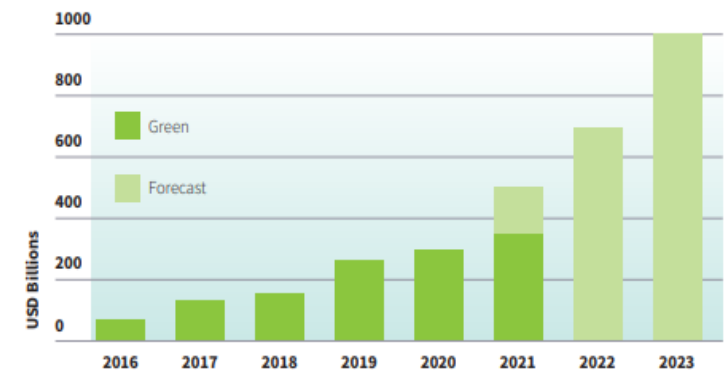
## The \$1 trillion: cumulative progression



## Green, social, and sustainability bond issuance doubled in 2020






## Annual trillion in green bonds within reach by 2023



# Eligible Projects

- ❑ The Climate Bonds Taxonomy identifies the assets and projects needed to deliver a low carbon economy and gives GHG emissions screening criteria consistent with the 1.5°C global warming limit set by COP 21 Paris Agreement.
- ❑ The Sector Criteria contain the requirements that specify what assets and infrastructure can be financed with bonds/loans, which have received Climate Bonds Certification.

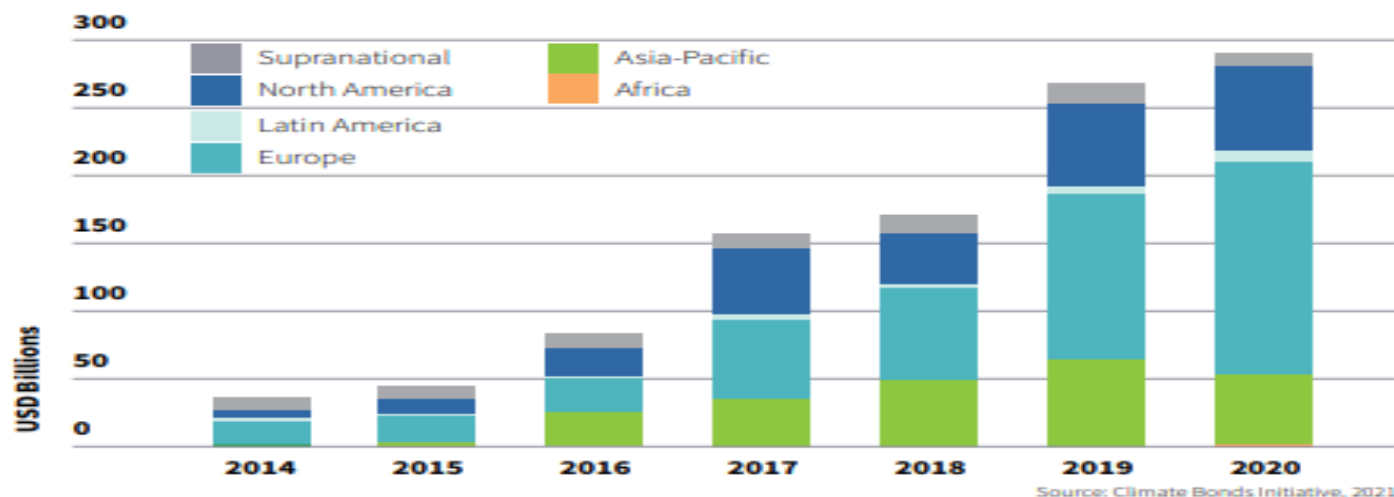
ENERGY	TRANSPORT	WATER	BUILDINGS	LAND USE & MARINE RESOURCES	INDUSTRY	WASTE	ICT
Solar	Private transport	Water monitoring	Residential	Agriculture	Cement production	Preparation	Broadband networks
Wind	Public passenger transport	Water storage	Commercial	Commercial Forestry	Steel production	Reuse	Telecommuting software and service
Geothermal	Freight rail	Water treatment	Products & systems for efficiency	Ecosystem conservation & restoration	Glass production	Recycling	Data hubs
Bioenergy	Aviation	Water distribution	Urban development	Fisheries & aquaculture	Basic Chemical production	Biological treatment	Power management
Hydropower	Water-borne	Flood defence		Supply chain management	Fuel production	Waste to energy	
Marine Renewables		Nature-based solutions				Landfill	
Electrical Grids & Storage						Radioactive waste management	
Nuclear							

 Certification Criteria approved  
 Criteria under development  
 Due to commence

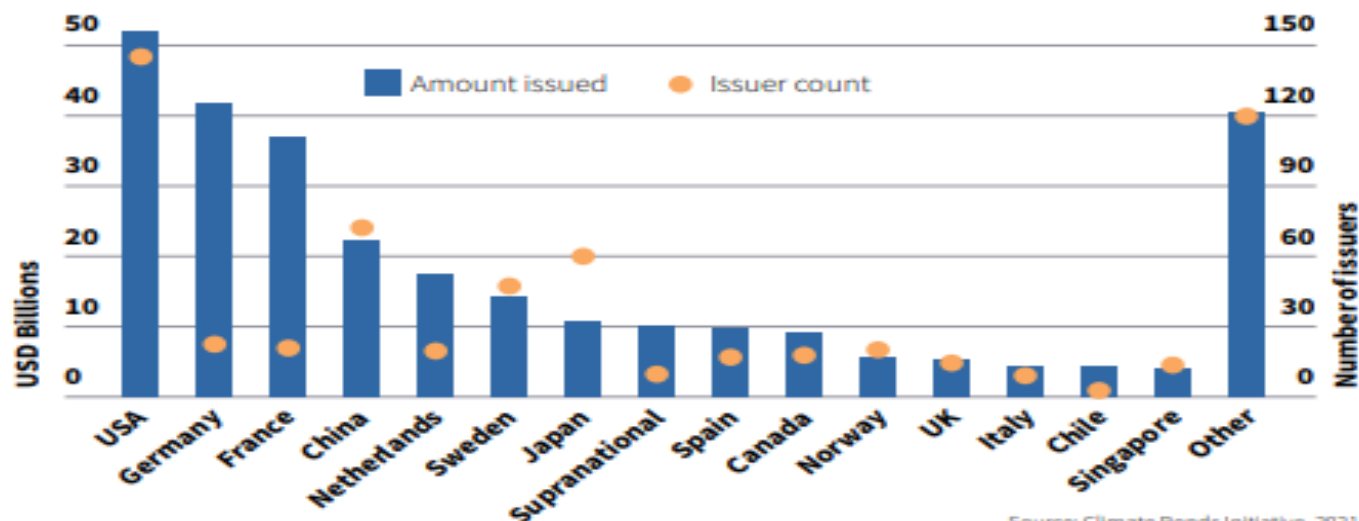
# Top Regions & Countries for Green Bond Issuance



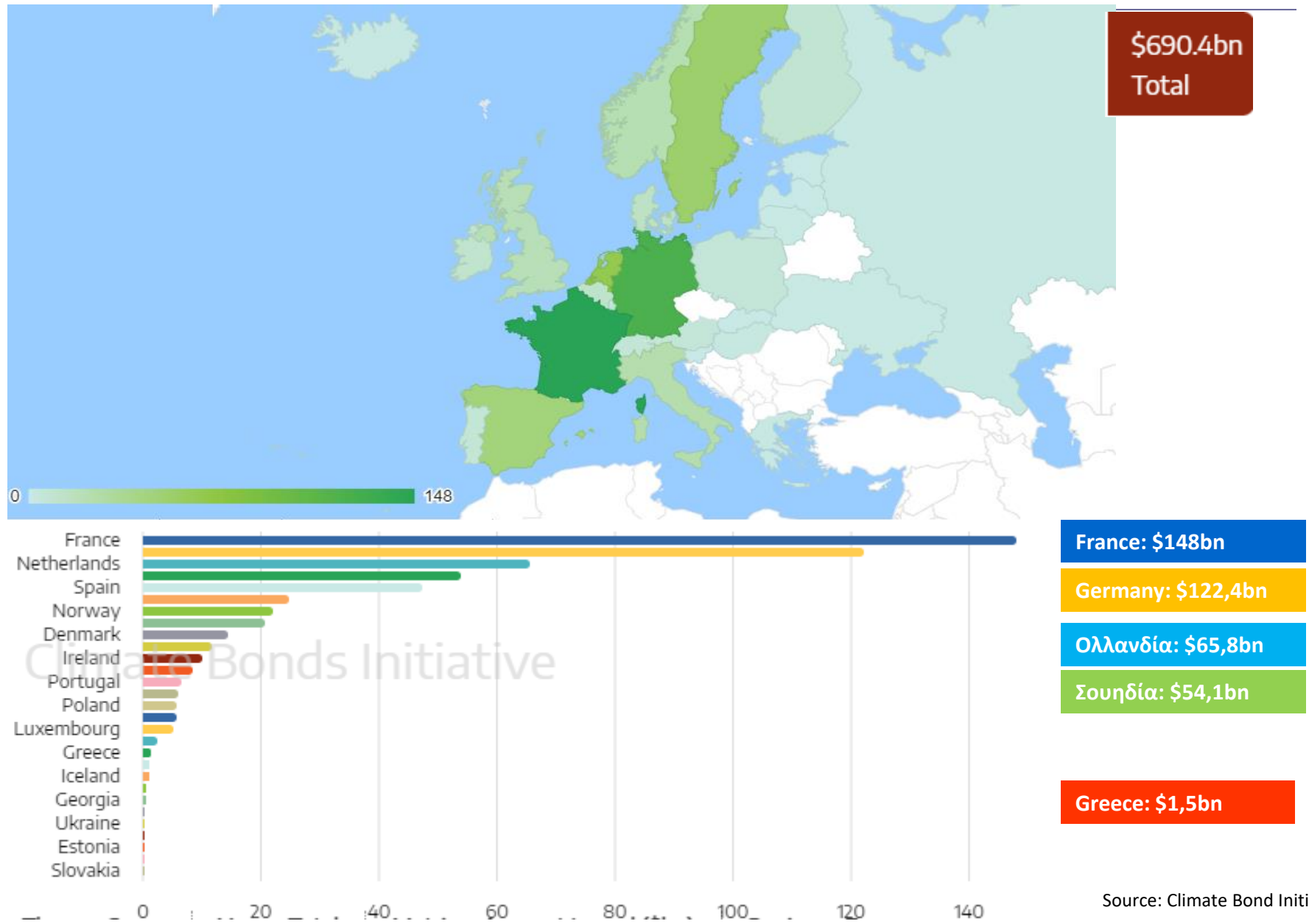
Europe was the dominant region for green debt in 2020



USA, Germany and France lead 2020 green bond issuance

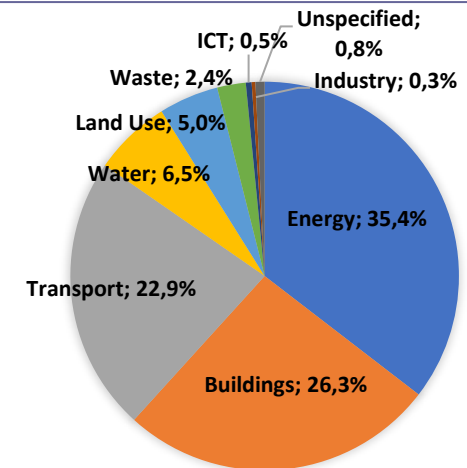


# Europe Green Bond Issuance

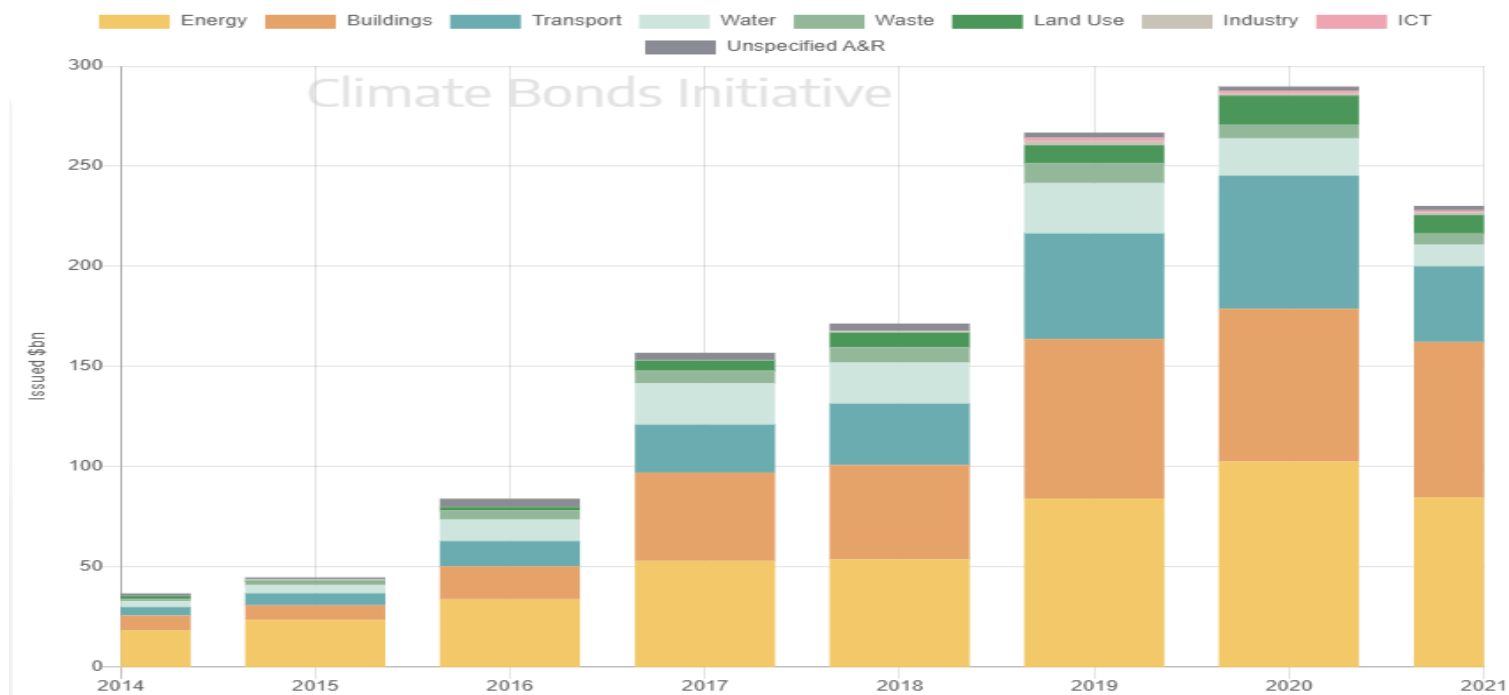


# Use of Proceeds Breakdown 2020

- Energy sector: USD102,7bn
- Low Carbon Buildings: USD76,2bn
- Low Carbon Transport: USD66,4bn
- Water Infrastructure: USD18,7bn
- Waste: USD6,9bn
- Land Use: USD14,4bn
- ICT : USD1,4bn
- Industry: USD0,9bn



Green Bonds: Use of Proceeds Breakdown 2014-2020





# Who Can Issue a Green Bond?

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- Any entity with bonding authority may issue Green Bonds, including private companies, financial institutions or governments. These include:
  - **Private companies:** Non-financial corporations, particularly energy and utility companies, finance specific environmental projects through Green Bonds issuance. Such issuances allow investors to know their investments are going to green solutions, as companies issuing Green Bonds obligate themselves to ring-fence the proceeds to specific, previously-outlined projects.
  - **Financial institutions:** Commercial, investment and development banks can all issue Green Bonds. Such issuances signal the companies' commitment to sustainable development.
  - **Municipalities and national governments:** Government entities can issue Green Bonds as a means to finance specific local projects or meet selected environmental targets. For municipalities, Green Bonds are a sure way to engage local stakeholders into financing sustainable solutions, while for national governments, sovereign Green Bonds aid in carrying out sustainable policy agendas and stimulate the flow of private capital investments.

# Issuing of Green Bonds in Europe

## □ European Union

- ✓ 30% of the EU's up-to 800 billion euro COVID-19 recovery scheme NextGenerationEU, which gives grants and loans to member states until end-2026, will be raised through the issuance of green bonds and use the proceeds to finance green investments and reforms, in a clear sign of its commitment to sustainability.
- ✓ The Commission proceeded with the issuance of the first NextGenerationEU green bond in October 2021, worth €12 billion, the world's largest green bond to date.

## □ Greece

- **TERNA Energy** issued a seven-year €150mn green bond in October 2019. EBRD invested €18mn in the green bond issuance, being the first certified climate bond that the EBRD is supporting in the country. Ernst & Young has verified that the bond meets the Climate Bonds Initiative's classification as a certified climate bond.
- 2019 was also the year in which **ELLAKTOR Group**, taking into account the favorable conditions in the international capital markets, proceeded to the issuance of an international, green bond, with fixed rate without collateral, totaling €670mn over a five-year period.
- **MYTILINEOS S.A.** announced in April 2021 the successful pricing of its inaugural green bond offering of €500mn aggregate principal amount of 2.25% senior notes due 2026 at an issuance price of 100%.
- **NATIONAL BANK OF GREECE** completed successfully the placement of a green senior bond in the Greek market in October 2020, totaling €500 million.
- **PIRAEUS BANK** has successfully completed the book building process for the issuance of a €500 million green bond in October 2021.
- The **Greek Government** prepares to issue green state bonds in 2022.

# Complementary Steps To Issue A Green Bond



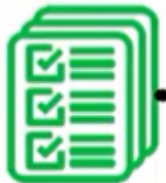
**Pre-Issuance**

- Define a Green Bond Framework
- Check for support mechanisms



**Issuance**

- Include the green attributes in marketing materials and investor documents

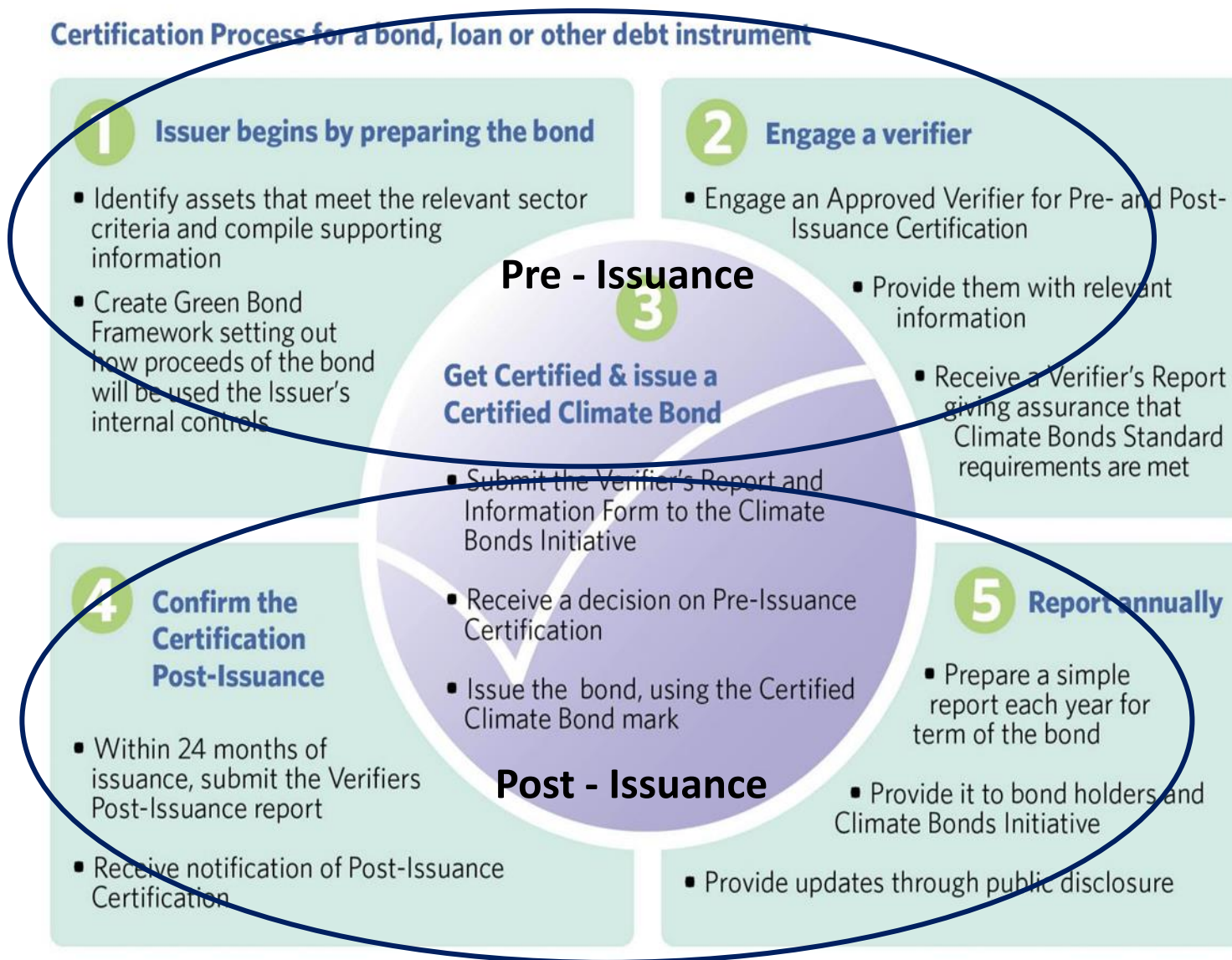


**Post-Issuance**

- Allocate proceeds to the projects.
- Monitor the projects and track allocation over time.
- Publish Impact Report.
- Post issuance Audit if necessary.

# Certification Process

## Certification Process for a bond, loan or other debt instrument



Issuer begins by preparing the bond



Engage an Approved Verifier



Get Certified & issue a Certified Climate Bond



Confirm the Certification post-issuance



Report annually



# IENE – Approved Verifier



- As of January 2021, **IENE became the first organization in Greece and SE Europe to be granted Approved Verifier status** under the Climate Bond Standard. This is a significant milestone in the development of Green Bond markets in SE Europe.
- As an Approved Verifier, IENE is in a position to **assess project eligibility** against the solar, wind, biomass, geothermal, energy efficiency, cogeneration and low carbon buildings criteria under the Climate Bonds Standard for green bond issuance.
- Verification services will be provided across all low carbon energy sectors for **pre-issuance** and **post-issuance assurance**.



**Thank you for  
your attention**



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