



# CFA UK LEVEL 4 CERTIFICATE IN CLIMATE AND INVESTING

## V.1 TESTED FROM 1 April 2022

### UNIT AIMS

By the end of this unit, learners should be able to demonstrate:

- An understanding of climate change as it relates to investing, the different investment approaches that can be used to incorporate climate considerations into the analysis and valuation of assets and investment instruments, and in portfolio management and construction.
- An understanding of climate science and the systemic impact of climate risks on the financial system and the social factors arising from climate change.
- An understanding of the climate-related regulation, the policy response and the evolving corporate disclosure landscape.
- An understanding of climate change impacts and opportunities, climate change mitigation and climate change adaptation and resilience.
- An understanding of climate risk measurement: data, metrics, targets and scenario analysis.
- An understanding of stewardship and engagement on climate topics.
- An understanding of the key approaches to managing listed investment instruments in relation to climate, integrating climate considerations into investment strategy and decision-making for equities, fixed income, securitisations and listed real estate investment trusts and companies.

- An ability to analyse how climate considerations may affect equity valuations and debt credit risk, applying key metrics and tools to listed investment instruments.
- An understanding of the key approaches to managing private market investment in relation to climate, integrating climate considerations into investment strategy and decision-making for private equity, private debt, real estate and infrastructure.
- An ability to analyse how climate considerations may affect company valuations and debt credit risk, applying key metrics and tools to private market instruments and direct investments in real assets.
- An understanding of key approaches for integrating climate change into portfolio construction and management and the role of green and climate indices.
- An ability to analyse climate related risks and opportunities by geography and sector, by different types of climate risk, including assessing a portfolio's exposure to carbon intensive, transition and climate-positive (green) assets.
- An understanding of key approaches to integrating climate in investment mandates and the evolving client reporting landscape for investors.

Question allocation across the syllabus is balanced on the guidance of psychometric and industry specialists. The following question allocation for Version 1 of the CFA UK Level 4 Certificate in Climate and Investing is provided as a broad indication of the relative ‘weighting’ of different parts of the syllabus in examinations from 1 April 2022.

Topic	Topic Name	Question Allocation
1	Introduction to Climate and Investing	3-6
2	Climate Science and Climate Risks and Considerations	4-8
3	Regulation, Policy Response and the Corporate Reporting Landscape	6-12
4	Climate Change Impacts and Opportunities	4-8
5	Climate Risk Measurement: Data, Metrics, Targets and Scenario Analysis	12-16
6	Stewardship and Engagement on Climate	4-7
7	Listed Investment Instruments	12-16
8	Private Market Investment Instruments	12-18
9	Portfolio Management	8-12
10	Serving Client Needs	3-5

#### OTHER INFORMATION REGARDING THIS UNIT:

Exam format:	100 questions Online testing using standard multiple choice, drag and drop, gap-fill and item set questions
Time allowed for exam:	2 hours and 20 minutes
Grades:	Pass or Fail
Study Materials:	Official Training Manual Edition 1
Recommended study hours:	150 hours

# TOPIC 1 INTRODUCTION TO CLIMATE AND INVESTING

## 1.1 INTRODUCTION TO CLIMATE AND INVESTING

- 1.1.1 Define what is meant by climate change
- 1.1.2 Explain the concepts of:
  - climate change mitigation
  - greenhouse gas emission scopes, carbon neutral and net zero
  - climate change adaptation and resilience
- 1.1.3 Explain how climate considerations can impact investment strategy and how investments can impact climate change
- 1.1.4 Explain the range of investment approaches that can be used to incorporate climate risk into portfolio management and construction:
  - exclusionary
  - best-in-class
  - active versus passive
  - tilting portfolio exposure
  - active ownership
  - thematic
  - impact investing
- 1.1.5 Identify the asset classes and investment instruments that can be impacted by climate considerations
- 1.1.6 Explain the differences between approaches to ESG investing and integrating climate considerations into investment

# TOPIC 2 CLIMATE SCIENCE AND CLIMATE RISKS AND CONSIDERATIONS

## 2.1 CLIMATE SCIENCE

- 2.1.1 Explain the history and science of climate change:
  - greenhouse effect, greenhouse gas, emissions and concentration
  - carbon sinks – land, ocean and biosphere
  - carbon budgets
  - global impacts

2.1.2 Assess the impacts of climate change and their feedback loops:

- global warming
- melting ice caps and sea level rises
- extreme weather events and natural hazards
- biodiversity and natural habitat loss in relation to the economy

2.1.3 Explain the challenges of accounting for climate change related impacts:

- challenges in climate change modelling
- attributing impacts to climate change
- feedback processes and tipping points
- human choices

## **2.2 CLIMATE RISKS AND CONSIDERATIONS**

2.2.1 Explain the systemic impact of climate risks on the financial system:

- financial risk
- universal ownership

2.2.2 Explain the financial risks and impacts of climate change:

- physical risks (acute / chronic)
- transition risks (policy / legal / technology / markets / reputation)

2.2.3 Assess supply, operational and resource management issues as they relate to climate change, including:

- natural capital and resource scarcity
- supply chain vulnerability, transparency and traceability
- stranded assets
- low carbon economy transition business models
- circular economy
- stakeholder relationships

2.2.4 Assess the social factors arising from climate change, including:

- health and labour productivity

- food security
- security and migration
- cities and urbanisation
- disaster preparedness and resilience
- 'just' transition

## TOPIC 3 REGULATION, POLICY RESPONSE AND THE CORPORATE REPORTING LANDSCAPE

### 3.1 POLICY RESPONSE AND REGULATION

3.1.1 Identify relevant regulatory and governance aspects arising from climate change:

- sustainability and climate policy decision making responsibility and supervision
- fundraising, fund management and funding deployment
- compliance, disclosures and reporting

3.1.2 Explain the key drivers and stakeholders in the growth in environmental and climate policies and key frameworks, including:

- planetary boundaries
- interplay between development, environmental and social goals and the role of assessment and disclosure frameworks
- interplay between nature and climate, including climate change impact on ecosystem services and nature-based solutions to climate change risks

3.1.3 Explain the key drivers and stakeholders in international climate and environmental agreements and conventions:

- greenhouse gas emissions and the Kyoto Protocol
- response to climate science and the role of the UN Intergovernmental Panel on Climate Change (IPCC)
- coordinated commitments to address climate change and the role of the Paris Agreement
- target setting and tracking progress and the role of the UN Framework Convention on Climate Change (UNFCCC)
- systemic nature of climate change, its impact on the financial system and central banks and regulator response

- 3.1.4 Explain the key drivers and stakeholders in national environmental and climate policies:
- nationally determined contributions (NDCs) and progress to date
  - carbon budgets and sovereign carbon accounting
  - addressing climate vulnerabilities through adaptation
- 3.1.5 Explain the role and aims of carbon pricing policy
- 3.1.6 Explain the role and aims of key international initiatives related to climate change:
- investment-related initiatives
  - central banks and financial regulators
  - intergovernmental / multilateral institutions

## **3.2 THE CORPORATE REPORTING LANDSCAPE**

- 3.2.1 Explain the aims and challenges of climate and nature-related disclosures:
- transparency, comparability, consistency over time and comprehensiveness
  - time horizons and materiality assessment
- 3.2.2 Assess the concept of materiality as it relates to climate-related risk management, disclosures and financial reporting, including:
- relevance of economic, environmental and social aspects, stakeholder groups and time horizons
  - interaction between non-financial and financial materiality: dual and dynamic materiality
  - International Financial Reporting Standards (IFRS) accounting guidance on financial materiality as it relates to climate change
  - assessment and impact on future financial performance, including cost benefit assessments
- 3.2.3 Explain key elements of corporate reporting and financial disclosures for companies and issuers:
- mandatory regulations: principles-based and standards
  - voluntary guidelines and standards
  - range of reporting channels available
  - distinction between sustainability reporting and financial reporting

3.2.4 Assess the strengths and limitations of disclosures across frameworks and the link to corporate reporting:

- emissions and carbon accounting frameworks and standards
- sustainability disclosure frameworks and standards used for climate-related reporting
- non-financial disclosures in corporate reporting and labelled debt reporting

3.2.5 Assess key aspects of integrating climate change in financial accounts and reports:

- frameworks and standards for climate-related disclosures in financial reporting
- frameworks and standards for integrated reporting
- approaches to improve the consistency and comparability of reporting

3.2.6 Explain the role of key stakeholders in the reporting landscape including:

- regulators
- standard setters
- investors
- insurers / guarantors
- stock exchanges
- indices
- rating agencies
- groups and non-governmental organisations
- supranational stakeholders

## **TOPIC 4 CLIMATE CHANGE IMPACTS AND OPPORTUNITIES**

### **4.1 CLIMATE CHANGE IMPACTS AND OPPORTUNITIES**

4.1.1 Explain major categories of financial impact of climate change: revenues; expenditure; assets and liabilities (including stranded assets); capital and financing

4.1.2 Explain the following climate-related opportunities:

- resource efficiency and circularity
- energy sources



- products and services
- markets and diversification
- adaptation and resilience

## **4.2 CLIMATE CHANGE MITIGATION**

4.2.1 Describe mitigation costs at a global level:

- range and cost of mitigation (abatement curve)
- fitting mitigation options into comprehensive transition scenarios

4.2.2 Assess the range of climate change mitigation solutions by sector and cross-sectoral themes, including:

- energy sector
- industry
- property and buildings
- transport
- forestry and agriculture
- cross-sectoral themes, such as energy efficiency, waste management, equipment and IT, carbon capture and storage

4.2.3 Assess the strengths and limitations of climate change mitigation policy response, including:

- carbon pricing
- subsidies and green finance tax incentives
- research and development programmes
- regulation, standards and awareness campaigns
- public private partnerships and blended finance
- integrating multiple policies

## **4.3 CLIMATE CHANGE ADAPTATION AND RESILIENCE**

4.3.1 Explain the context for climate change adaptation

4.3.2 Assess the range of adaptation and resilience solutions, including:

- protecting coastlines and infrastructure; adapting to sea level rise
- managing agriculture and land use practices to improve carbon sequestration
- planning for scarce water resources
- resilient built environments and protecting public infrastructure from extreme weather events

- 4.3.3 Assess approaches to the design, operations and monitoring of solutions for climate change adaptation and resilience:
- physical climate risk exposure assessment
  - impact definition, targets and assessment, including resilience assessment at asset and national level, cost benefit analysis of resilience options, and trade-off analysis
  - the role of insurance
- 4.3.4 Assess the strengths and limitations of adaptation and resilience policy response, including:
- multilateral development finance institutions
  - adaptation and resilience frameworks and disclosure

## **TOPIC 5 CLIMATE RISK MEASUREMENT: DATA, METRICS, TARGETS AND SCENARIO ANALYSIS**

### **5.1 DATA, METRICS AND TARGETS**

- 5.1.1 Explain the strengths, limitations and challenges of climate data:
- relevance, consistency, comparability, decision useful
  - historical / current versus forward looking
  - benchmarking
  - calculation methodologies
  - SMART targets
- 5.1.2 Explain the strengths and limitations of company disclosed data versus third-party sources
- 5.1.3 Assess greenhouse gas emissions (scope 1, 2 and 3)
- organisational boundary for reporting emissions
  - operational boundary for reporting emissions
  - strengths, limitations and challenges of emissions data
- 5.1.4 Calculate total emissions, carbon intensity and weighted average carbon intensity
- 5.1.5 Assess the scope and limitations of carbon footprinting versus decarbonisation trajectories and temperature alignment
- 5.1.6 Explain the concept of carbon pricing and key carbon pricing instruments:

- emissions trading systems
- carbon tax
- social cost of carbon
- internal carbon pricing (shadow price)

5.1.7 Calculate a theoretical carbon price

5.1.8 Explain key metrics and indicators related to:

- weather and natural hazards
- water usage and risks
- air pollution
- carbon sinks and sequestration

5.1.9 Explain the range of targets set due to regulatory requirements and / or market constraints:

- energy usage
- waste management
- target setting and science-based targets
- GHG emissions targets and net zero

## 5.2 ANALYTICAL TOOLS AND SCENARIO ANALYSIS

5.2.1 Explain the distinctions between climate models and scenario analysis

- climate models, integrated assessment models (IAMs), scenario analysis and stress testing, and how they relate to each other
- different types of models: deterministic, probabilistic, observation-based

5.2.2 Compare key climate models and scenarios and commonly used analytical scenarios:

- General circulation models (GCMs)
- Integrated assessment models (IAMs)
- Intergovernmental Panel on Climate Change (IPCC) temperature scenarios
  - Representative Concentration Pathways (RCP)
  - Shared Socioeconomic Pathways (SSP)
- International Energy Agency (IEA) scenarios
- International Renewable Energy Agency (IRENA) scenarios
- Principles for Responsible Investment (PRI) Inevitable Policy Response

5.2.3 Identify the limitations and pitfalls of scenario analysis and the drivers behind the choice of model(s) and scenarios:

- quantitative and qualitative considerations

- defining assumptions versus seeking an answer
  - key considerations to determine the analytical approach, e.g. geographical coverage, economic variables and sector information
- 5.2.4 Evaluate scenario temperature rating tools
- 5.2.5 Assess relevant assessment tools and models, distinguishing between:
- transition risk and decarbonisation pathways
  - physical risk to assets
- 5.2.6 Evaluate climate value-at-risk and carbon value-at-risk, including stress testing for given carbon prices at asset level and portfolio level
- 5.2.7 Assess stress testing, including a focus on scenarios for financial system analysis, e.g. Network for Greening the Financial System

## TOPIC 6 STEWARDSHIP AND ENGAGEMENT ON CLIMATE

### 6.1 CORPORATE STEWARDSHIP AND ENGAGEMENT ON CLIMATE

- 6.1.1 Explain the purpose and regulation of stewardship and engagement:
- fiduciary duty
  - stewardship codes – UK, EU, US, Japan
  - industry practices
- 6.1.2 Explain the following key concepts in the context of climate change:
- challenges to engagement including inertia, policy and behavioural economics
  - evolution and distinction between corporate social responsibility (CSR) and stewardship
  - corporate governance of climate risks and opportunities
  - incorporating climate change in corporate strategy
  - climate governance engagements
- 6.1.3 Apply appropriate methods to establish an engagement approach and set engagement topics:
- using climate change disclosures to inform engagement strategy
  - using taxonomies to inform engagement strategy
  - addressing climate lobbying

- establishing an engagement approach: goal setting, tactics
- escalation techniques
- divestment versus engagement
- voting
- conflicts of interest for the stewardship role

## 6.2 SYSTEM ENGAGEMENT ON CLIMATE

- 6.2.1 Explain how climate change can be incorporated into investor engagement strategy and planning:
- investment firm corporate responsibility
  - challenges to climate engagement and action
- 6.2.2 Explain key corporate focused investor initiatives for engagement
- 6.2.3 Describe the drivers and scope of engagement with governments, regulators and policymakers

# TOPIC 7 LISTED INVESTMENT INSTRUMENTS

## 7.1 EQUITIES

- 7.1.1 Assess the strengths and limitations of key approaches to managing equities in relation to climate
- 7.1.2 Explain key approaches to integrating climate considerations into business strategy:
- decarbonisation
  - tracking the level of transition to low-carbon business activities (e.g. green revenues)
  - pure-play companies
  - financial institutions
- 7.1.3 Apply key tools and metrics to equities
- 7.1.4 Explain how corporate reporting and financial disclosures for companies and issuers support equity analysis including:
- reporting frameworks, e.g. Task Force on Climate-related Financial Disclosures (TCFD), stakeholder disclosure, and value chain disclosure
  - accounting standards, e.g. IFRS guidance, integrated reporting and sector-specific materiality assessment

7.1.5 Analyse how climate considerations may affect valuation for equities

## **7.2 FIXED INCOME**

7.2.1 Assess the strengths and limitations of key approaches to managing fixed income and structured finance in relation to climate:

- decarbonisation approach
- climate solutions approach

7.2.2 Explain the growth and appeal of sustainable and labelled debt, including:

- unlabelled bonds (climate aligned bonds)
- use of proceeds bonds funding climate solutions
- sustainability-linked bonds
- transition bonds
- funding mitigation solutions versus adaptation and resilience solutions

7.2.3 Explain key elements of reporting as they relate to analysing sustainable debt, including:

- guidance and standards
- development and use of taxonomies
- post-issuance allocation and impact reporting
- external review and verification

7.2.4 Apply key metrics to fixed income and structured finance

7.2.5 Apply key analytical tools to fixed income and structured finance

7.2.6 Analyse how climate considerations may affect valuation for fixed income and structured finance

7.2.7 Analyse how climate considerations may affect the credit risk rating of fixed income and structured finance securities, including the difference between ESG / climate-related assessments and ESG / climate integration in credit risk ratings

## **7.3 REAL ASSET SECURITIES**

7.3.1 Assess the strengths and limitations of key approaches to managing climate risk for investment in listed real asset securities

7.3.2 Apply key tools and metrics to investments in listed real asset securities

- 7.3.3 Explain key elements of disclosures as they relate to investment in listed real asset securities
- 7.3.4 Analyse how climate considerations may affect valuation for investment in listed real asset securities

## **TOPIC 8 PRIVATE MARKET INVESTMENT INSTRUMENTS**

### **8.1 PRIVATE EQUITY AND VENTURE CAPITAL**

- 8.1.1 Assess the strengths and limitations of key approaches to managing private equity / unlisted equities and venture capital in relation to climate change
- 8.1.2 Apply key tools and metrics to private equity / unlisted equities and venture capital:
- deal sourcing and new investments
  - post investment monitoring and engagement
  - exit
- 8.1.3 Explain key elements of corporate reporting and financial disclosures for companies and issuers as they relate to private equity / unlisted equities and venture capital
- reporting frameworks and regulations
  - data quality, benchmarking and estimation
- 8.1.4 Analyse how climate considerations may affect valuation for private equity / unlisted equities and venture capital

### **8.2 PRIVATE DEBT AND LENDING**

- 8.2.1 Assess the strengths and limitations of key approaches to managing private debt: engagement, divestment / disinvestment, and exclusions
- 8.2.2 Explain the growth and appeal of labelled private placements and loans, including:
- use of proceeds PP and loans (green, sustainability)
  - transition instruments such as sustainability-linked loans (SLL)
- 8.2.3 Apply key tools and metrics to private debt such as analysing reported emissions and use of estimator tools
- 8.2.4 Explain key elements of reporting as they relate to private debt, including:

- disclosure frameworks
  - reporting for green loans and SLL, including use of taxonomies, LMA / APLMA / LSTA Green Loan Principles, SLL principles and standards
- 8.2.5 Analyse the relevance of climate-related risks and opportunities to credit risk analysis and how climate considerations may affect valuation for private debt

### **8.3 DIRECT INVESTMENT IN REAL ESTATE**

- 8.3.1 Assess the strengths and limitations of key approaches to managing direct investment in real estate
- 8.3.2 Apply key tools and metrics to direct investment in real estate and real estate financing:
- measuring carbon emissions
  - transition risk assessment and decarbonisation trajectories
  - physical risk assessment
- 8.3.3 Explain key elements of disclosures as they relate to direct investment in real estate equity and/or debt, including:
- building certification
  - benchmarking – GRESB Real Estate
  - disclosure frameworks (e.g. EU Taxonomy, Sustainable Finance Disclosure Regulation (SFDR), green and sustainability bond reporting)
- 8.3.4 Analyse how climate considerations may affect valuation for direct investment in real estate

### **8.4 DIRECT INVESTMENT IN INFRASTRUCTURE**

- 8.4.1 Explain the key features of green and resilient infrastructure
- 8.4.2 Assess the strengths and limitations of key approaches to managing direct investment in infrastructure
- 8.4.3 Apply key tools and metrics to direct investment in infrastructure and infrastructure financing
- measuring carbon emissions
  - transition risk assessment
  - physical risk assessment
  - natural capital, biodiversity and nature-based solutions
- 8.4.4 Explain key elements of disclosures as they relate to direct investment in infrastructure equity and / or debt, including:



- benchmarking – GRESB Infrastructure
- disclosure frameworks (e.g. EU Taxonomy, SFDR)
- use of green taxonomies in financing infrastructure and KPI reporting under sustainability-linked debt

8.4.5 Analyse how climate considerations may affect valuation for direct investment in infrastructure assets

## 8.5 OTHER PRIVATE MARKET INSTRUMENTS

8.5.1 Assess the key approaches to integrating climate considerations in other instruments: derivatives including commodity derivatives, retail products (e.g. savings products) and funding platforms

# TOPIC 9 PORTFOLIO MANAGEMENT

## 9.1 PORTFOLIO STRATEGY

9.1.1 Explain the challenge of designing investment products versus direct financing of real economy climate solutions

9.1.2 Evaluate approaches for integrating climate change factors into portfolio construction and management:

- overview of investment frameworks
- strategic asset allocation decisions
- portfolio exposure
- risk management
- performance attribution

9.1.3 Evaluate the range of investment strategies that can be used to incorporate climate-related factors into portfolio management and construction:

- exclusion
- best-in-class
- tilting portfolio exposure
- thematic
- impact investing
- active ownership
- active versus passive

## **9.2 THE ROLE OF GREEN AND CLIMATE INDICES**

9.2.1 Explain the EU benchmarking regulations by reference to the Paris Agreement and climate change:

- EU ESG disclosure requirements for benchmarks
- the EU climate benchmarks

9.2.2 Explain the growth of green indices and climate-related index products, including the evolution of climate-related exclusion / inclusion rules for ESG indices

9.2.3 Evaluate opportunities presented by climate and sustainability indices and index exchange-traded funds (ETFs):

- climate index construction
- climate index approaches
- equity indices
- fixed income indices
- sovereign debt indices
- property indices

## **9.3 PORTFOLIO CLIMATE-RELATED ANALYSIS**

9.3.1 Analyse climate-related risks and opportunities by geography and sector

9.3.2 Assess a portfolio's exposure to carbon-intensive assets or exposure to low carbon technologies using revenue-based and emissions-based metrics (backward looking climate-related analysis)

- exposure to carbon intensive assets: power generation, fossil fuel exposure, emissions, carbon intensity, carbon score, carbon momentum
- exposure to low-carbon technologies: sector specific metrics, emissions reduction, net carbon emissions

9.3.3 Apply modelling and valuation techniques to a range of asset classes: equities, fixed income, real assets (property and infrastructure) and other alternatives (forward looking climate-related analysis)

- forward looking climate disclosure indicators
- climate scenario models

- 9.3.4 Analyse how climate considerations may affect valuation across a range of asset classes

## TOPIC 10 SERVING CLIENT NEEDS

### 10.1 SERVING CLIENT NEEDS

- 10.1.1 Explain how climate considerations can impact client mandates, including:
- fiduciary duty
  - investment strategy and aims
  - behavioural finance
  - integrating climate in requests for proposal (RFPs) and setting mandates
- 10.1.2 Analyse climate considerations (e.g. investment horizon, risk profile, asset liability management) for different types of asset owners given their different investment drivers and aims:
- pension funds and plan trustees
  - life and non-life insurance companies, including catastrophe and casualty insurance considerations
  - endowments and foundations
  - family offices and High Net Worth Individuals (HNWI)
  - sovereign wealth funds
- 10.1.3 Compare climate considerations for retail and institutional investment products, disclosure and engagement
- 10.1.4 Explain the role of investment advisers (including independent financial advisers and similar) with respect to incorporating climate considerations into investment decisions and product suitability assessment
- 10.1.5 Identify national and regional considerations in relation to climate change for developed, emerging and frontier markets

### 10.2 INVESTOR DISCLOSURE

- 10.2.1 Explain the drivers and aims of climate-related disclosures for asset managers, asset owners and investment advisers at:
- investor portfolio level
  - company level
  - best practice (voluntary) versus mandatory

10.2.2 Explain key elements of investor disclosures and related drivers:

- mandatory disclosures for investment products, investment product creators, and investment advisers under the EU SFDR
- ecolabel for EU-based funds
- CFA Institute ESG Investment Disclosure Standards for Investment Products
- recommended disclosure under Task Force on Climate-related Financial Disclosures (TCFD)
- voluntary investor and asset owner reporting under the UN Principles for Responsible Investment (PRI), the UN Principles of Sustainable Insurance (PSI) and the Guide for Investor Disclosures (Institutional Investor Group on Climate Change (IIGCC))

10.2.3 Explain the scope of disclosures, taxonomy and relationships applicable at:

- investment level (security / product / portfolio / organisation)
- portfolio level
- exposure level (organisation / system)