



Carbon Market Services for Banks

Booklet

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1.

Rising Momentum for Carbon Pricing

Scientific research provides unequivocal evidence for global warming, which is linked to an increasing occurrence of extreme weather events and incidence of droughts, floods and other natural hazards.¹ These events have significant direct and indirect impact across large segments of the global economy, including infrastructure and buildings, power generation, agriculture and forestry, and industry. Understanding the impact climate change is likely to have on physical infrastructure or productivity levels is vital for intermediaries that finance such assets or investment firms that manage holdings on behalf of investors. Valuation approaches and standards currently applied in the broader industry often overlook the material impact climate change can have on long-term value of the underlying assets.

Investors and financial regulators need to become cognisant of the impacts physical climate-change risks and carbon pricing regulation is expected to have on invested assets. The recognition of this

'climate value at risk'² within the global financial industry is rising, as well as the availability of approaches to measure and manage this exposure. Institutional investors are starting to reconsider holdings in the fossil fuel sector, and announcements by pension funds, investment funds and wealth managers on divesting from coal, gas and oil companies are sending a strong message that owned assets are overvalued and may become stranded. According to an international financial services company, the valuation of some key European fossil fuel companies (including BP and Royal Dutch Shell) could half if currently assumed reserves are adjusted for the usage that will allow meeting internationally agreed targets to avoid the threshold for "dangerous" climate change.³ Another research study estimates the value at risk linked to climate change impacts at USD 4.2 trillion (cumulative loss to manageable assets to 2100 discounted to the present), equivalent to Japan's GDP.⁴ Disregarding the systemic risk that is building up as a result of inaction on the front of climate change questions the fiduciary obligations fund managers have towards their investors with regards to risk management and value creation over time. Given these looming risks, the need to disclose climate

CARBON BUBBLE

Emissions from burning all known reserves of coal, oil and natural gas.

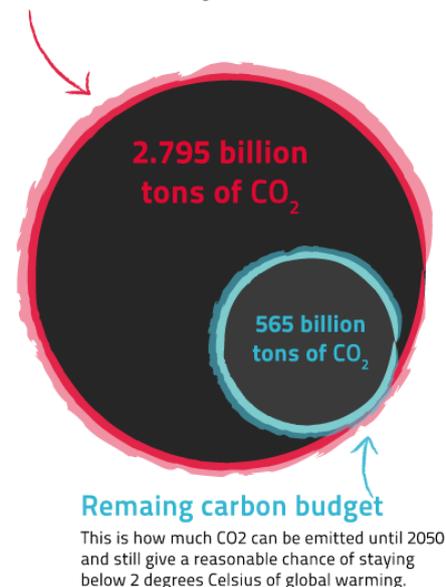


Figure 1: Fossil fuel reserves – estimate on the degree of stranded assets

¹ IPCC (2014) Fifth Assessment Report of the Intergovernmental Panel on Climate Change

² Value at risk measures the financial loss an asset may experience given a particular probability over a defined time horizon

³ HSBC Global Research (2013) Oil & carbon revisited – Value at risk from 'unburnable' reserves

⁴ The Economist Intelligence Unit (2015) The cost of inaction: Recognising the value at risk from climate change

change related risk exposure by corporates is being advocated or required by regulators. One example includes the US Securities and Exchange Commission's (SEC) release of its first climate risk disclosure guidance note in 2010, which is currently not binding but is being followed by a growing number of listed companies.⁵ Another noteworthy development is the release of recommendations by the Task Force on Climate-related Financial Disclosures of the Financial Stability Board on climate-related financial disclosures applicable to organisations across sectors and jurisdictions. These include disclosure regarding organisational governance around climate-related risks and opportunities, foreseen impact of climate-related risks and opportunities on the adopted business strategy, and approaches used to identify, assess and manage material risks.⁶

At the same time, a growing number of financial institutions are turning the risk into an opportunity to enter new markets, develop new products, and diversify the investment portfolio.

Investors are already taking steps to allocate capital to more low carbon, climate resilient opportunities, and are embedding screening tools and valuation metrics that favour greener investments. This is not only driven by respective risk management units, but also by the investment divisions seeking to realise attractive risk-return objectives. The dramatic plunge in development costs of renewable energy technologies observed over the past decade is putting many clean energy investments at par with conventional, fossil-fuel powered projects. For instance, solar PV module prices have dropped 75% since 2009, while wind projects are capable being commercially viable at tariffs of less than USD 0.05 per kilowatt-hour (kWh).⁷ Many investments in energy efficiency offer rapid payback periods, creating new credit line opportunities for banks.⁸ Increased likelihood of climate change induced climatic events is also incentivising banks and insurers to develop new products that can shield clients from unanticipated adverse events, such as floods or dry spells.

The momentum created by the Paris Agreement resulting from the talks held during the 21st session of the Conference of the Parties to the UNFCCC (COP 21) is expected to further reinforce the importance of carbon pricing.

The Paris Agreement commits countries to aim to hold global temperatures well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C. This ambition is to be realised through the implementation of nationally determined contributions (NDCs), which represent national action plans that are to lead to a peak in global greenhouse gas emissions over time. Estimates indicate that in order to realise the pledges announced by individual countries in Paris, investments in the range of USD 3.5 trillion will be needed by 2030.⁹ The Paris Decision, serving as guidance for the implementation of the Paris Agreement and pre-2020 action, thereby urges developed countries to scale up their level of financial support and provide USD 100 billion annually in climate finance by 2020.¹⁰ Non-party stakeholders, including the private sector and financial institutions, are foreseen to play a vital role in providing co-funding and facilitating the channelling of finance to programmes on the ground.

The new climate framework agreed by 196 states under the Paris Agreement reconfirms the recognition that immediate action must be taken to enable the shift towards a cleaner and more climate resilient development pathway.

The implications for the financial industry once again come in the dual form of risks and opportunities. From the risk side, regulated carbon pricing practices (e.g. cap-and-trade schemes, carbon taxes) are expected to become more common and strict over time, introducing a price per tonne of CO₂ equivalent (tCO₂e) released across an increasingly large array of sectors. While the Paris Agreement is not expected to lead to a uniform, global price on carbon, interlinkages between emissions trading systems (ETS) and cross-jurisdictional carbon tax regimes may become more common. The onset of new sub-national, national or regional carbon pricing regulations will impact the value of existing assets held by financial institutions, and is likely to influence investment decision making processes going forward. As of today, over 40 countries and 25 subnational

⁵ US SEC (2010) Commission Guidance Regarding Disclosure Related to Climate Change

⁶ Financial Stability Board (2016) Recommendations of the Task Force on Climate-related Financial Disclosures

⁷ IRENA (2015) Renewable Power Generation Costs in 2014

⁸ This includes facilities operated by the EBRD, such as the EBRD Residential Energy Efficiency Credit Line

⁹ Carbon Brief (2015) Analysis: Developing countries need \$3.5 trillion* to implement climate pledges by 2030

¹⁰ UNFCCC (2015) Adoption of the Paris Agreement. Decision CP.21, paragraph 115

jurisdictions have introduced some form of carbon pricing regulation, either in the form of a cap and trade system or through carbon taxing.¹¹

EBRD recognises the significant benefits associated with decarbonisation and supports the transition to low carbon development in its region of operations (central Europe and eastern Asia). Enabling cost-effective climate change mitigation in the EBRD economies through financing investments in renewable energy generation and energy efficiency programmes is one of the Bank's strategies for engagement. For this purpose, EBRD has set up various national and sectoral facilities targeting such investments. One such dedicated facility is the Turkish Mid-size Sustainable Energy Financing Facility (MidSEFF) launched by EBRD with the support from the European Investment Bank (EIB) and European Commission (EU) that will provide a total of EUR 1.5 billion in loans through seven Turkish banks (Akbank, Denizbank, Finansbank, Garanti, Isbank, Vakifbank, Yapikredi) for on-lending to private sector borrowers, for financing mid-size investments in renewable energy, waste-to-energy and industrial energy efficiency.¹²

This booklet intends to inform stakeholders on the types of products financial service providers can offer in the field of carbon markets and climate finance. As part of MidSEFF, a dedicated carbon finance programme (the Carbon Finance Consultancy) seeks to support Turkey's financial sector's engagement with carbon pricing and carbon finance activities.¹³ As such, the focus of this booklet is on the identification of opportunities for the Turkish banking sector to become involved. At the same time, EBRD is actively supporting banks with managing the risk exposure side by advising on the application of internal carbon pricing protocols.

¹¹ World Bank and Ecofys (2017) Carbon Pricing Watch 2017

¹² For more information, please see: www.midseff.com

¹³ For more information, please see: www.turkishcarbonmarket.com

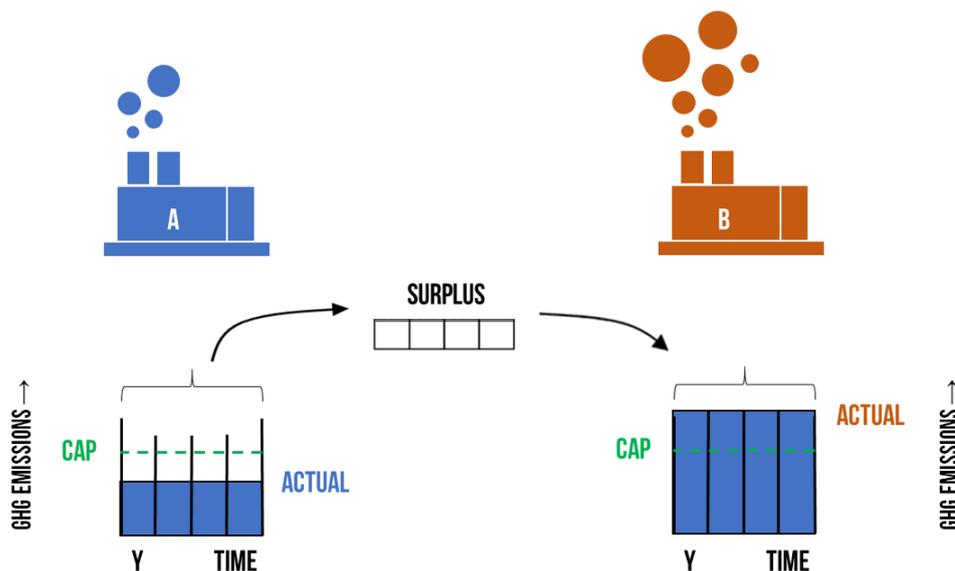
2. Role of the Carbon Markets

2.1 Global Carbon Markets

Carbon markets accommodate transactions in emission rights to enable participants to reach defined greenhouse mitigation targets in the most cost-effective way possible. These targets can be imposed through regulation, creating a compliance carbon market, or can be taken on voluntarily by companies, which leads to a voluntary market.

Under a compliance regime, greenhouse gas (GHG) emissions of large polluting entities are capped through legislation (i.e. a cap-and-trade or emissions trading schemes), forcing companies or individual installations to reduce emissions. While investing in increased energy efficiency or renewables may be commercially viable for some actors, others may find it more cost-effective to purchase excess allowances from others and use these instead to cover surplus emissions. Trade in such allowances may be complemented by retirement of carbon offsets generated outside the boundary of such cap-and-trade schemes.

Figure 2: Illustration of how cap-and-trade works¹⁴



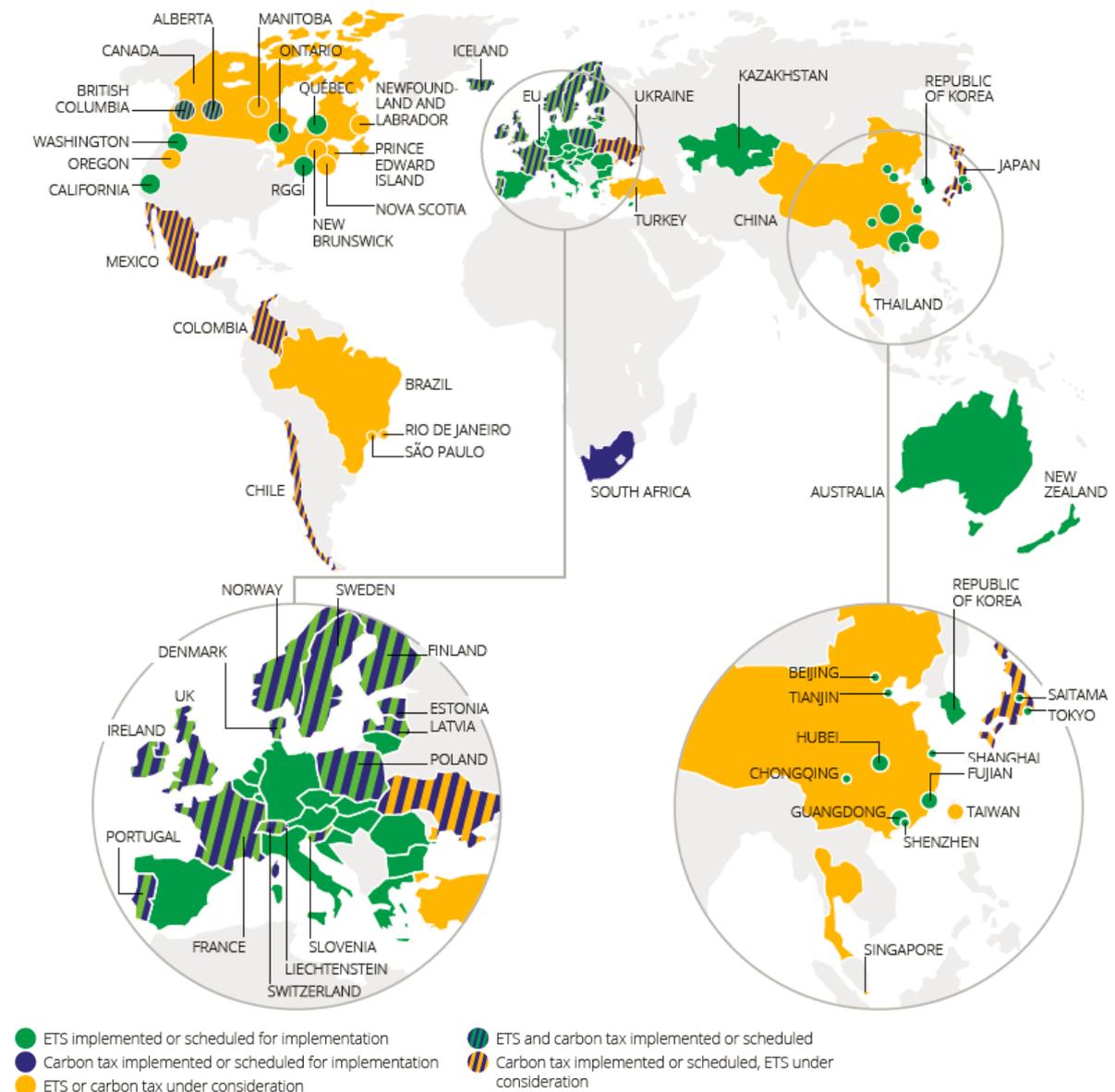
International commitments delivered under the Kyoto Protocol set the stage for the creation of a new commodity representing GHG emission reductions. Trading in this new commodity commenced in early 2000s, and by 2017 the total value of emissions trading schemes and other carbon pricing initiatives reached USD 52 billion.¹⁵ Most of the trading takes place in the European Emissions Trading Scheme (EU ETS), the world's largest compliance market representing the chief source for demand for allowances and carbon offsets. In this market, trade in allocated allowances (EUAs) accounted for the

¹⁴ Source: Climate Focus and GAIA (2017)

¹⁵ World Bank and Ecofys (2017) Carbon Pricing Watch 2017

bulk of the transacted volumes, where 1 EUA is equivalent to the right to emit one tonne of CO₂ equivalent (tCO₂e). Under the current third phase of the ETS, European installations have received a total cap on their emissions equivalent to around 2 billion tonnes of CO₂ equivalent, with the cap decreasing by 1.74% annually. While most of the GHG reductions have to be realised directly by the covered installations, companies have the option to use a limited amount of carbon offsets generated through certified emission reduction projects recognised by the United Nations Framework Convention on Climate Change (UNFCCC) that are implemented outside of the European market. The most prominent scheme is the Clean Development Mechanism (CDM), under which almost 1.9 billion carbon offsets have been generated by GHG mitigation projects worldwide.¹⁶

Figure 3: Global overview of existing, emerging and potential carbon pricing initiatives (2017)¹⁷



Trade in carbon offsets in the voluntary market was valued at USD 191 million in 2016.¹⁸ Most of the buyers – large corporates located in Europe and North America – purchase voluntary carbon offsets for corporate social responsibility (CSR) purposes or in anticipation of the onset of a compliance carbon market.

¹⁶ UNEP DTU (August 2017) CDM Pipeline
¹⁷ World Bank and Ecofys (2017) Carbon Pricing Watch 2017
¹⁸ Ecosystem Marketplace (2017) State of the Voluntary Carbon Markets 2017

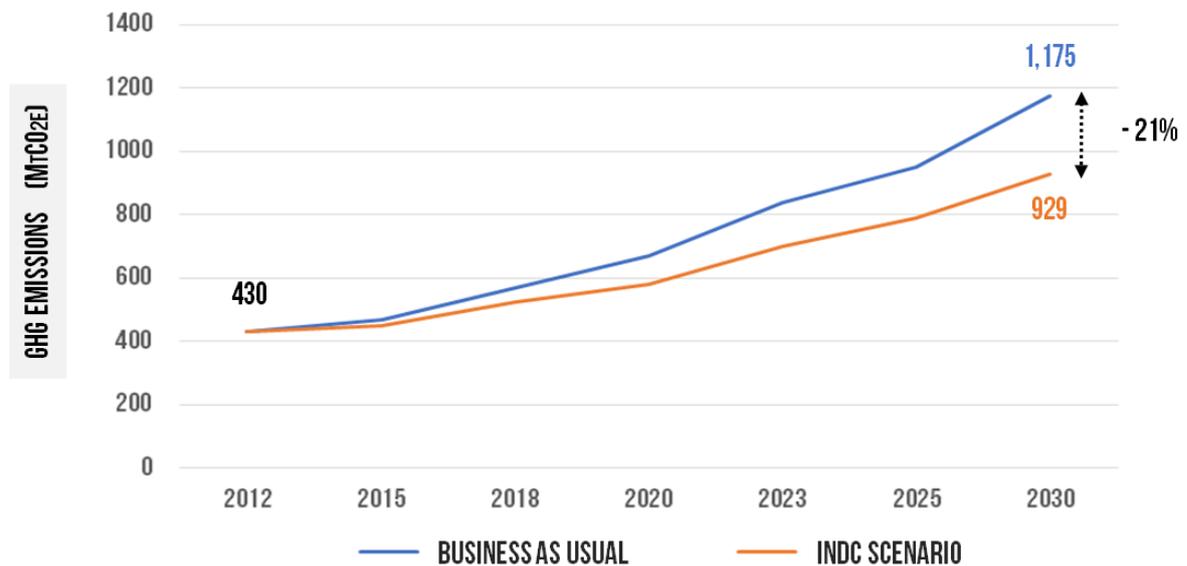
As illustrated in Figure , carbon pricing initiatives around the world are growing. Since the launch of the EU ETS, a growing number of countries have followed suit. The green areas on the map represent regions where an emissions trading scheme is already operational or will soon be launched. The blue and yellow areas show new states that have scheduled or are in the process of setting up a cap-and-trade scheme, revealing that carbon pricing is becoming increasingly more prevalent. China is currently the biggest market under development, with selected pilot schemes already capping a total of 1.2 billion tonnes of CO₂ equivalent. Once launched in late 2017, it will become the largest cap-and-trade market in the world, doubling the amount of GHG emissions currently regulated in the EU. Other countries, such as South Africa, are implementing a carbon tax linked to emissions from big polluters. It is expected that as countries turn to realising the commitments announced in Paris during COP21, fragmented carbon pricing initiatives will further proliferate.

2.2 Carbon Markets in Turkey

In reaction to the rapid increase in domestic GHG emissions and international actions to combat climate change, Turkey is working on developing new domestic policies that will facilitate the country's transition into a greener and less carbon-intense growth trajectory. In 2010, Turkey adopted a National Strategy and Action Plan on Climate Change, which highlights key ambitions and is based on the following vision:

“Turkey’s national vision within the scope of ‘climate change’ is to become a country fully integrating climate change-related objectives into its development policies, disseminating energy efficiency, increasing the use of clean and renewable energy resources, actively participating in the efforts for tackling climate change within its ‘special circumstances’, and providing its citizens with a high quality of life and welfare with low-carbon intensity.”

Figure 4: GHG emissions trajectory of Turkey under a business-as-usual scenario and the INDC pathway



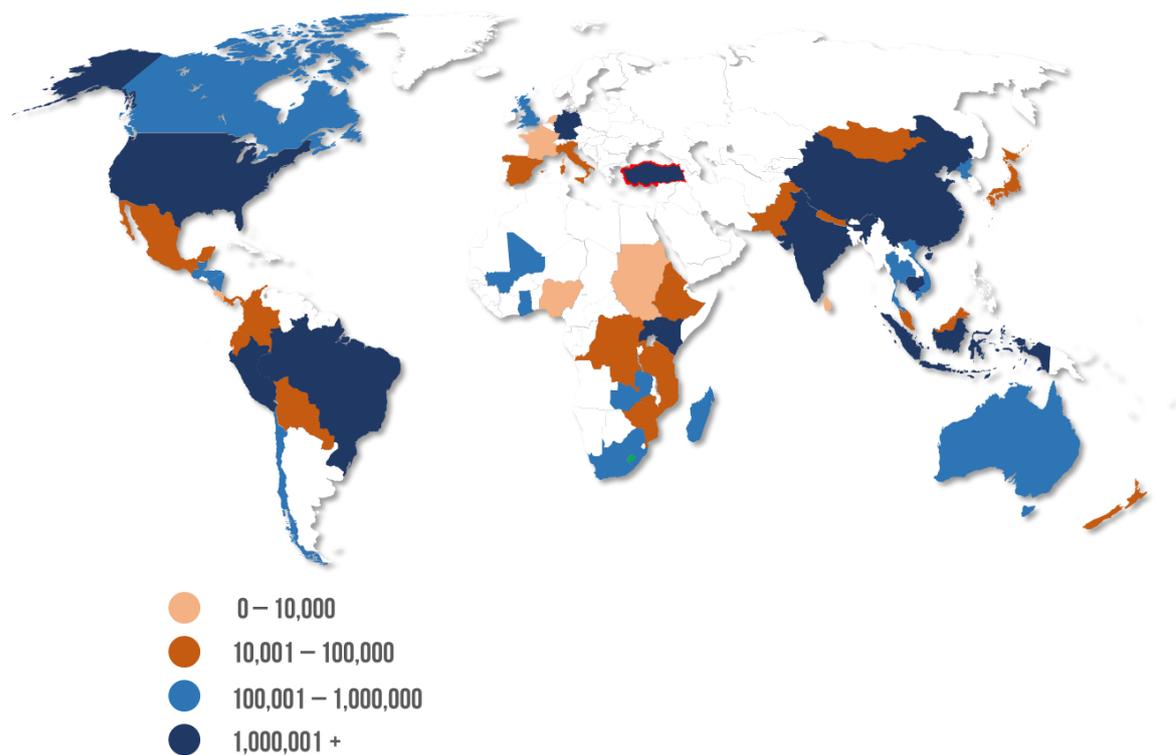
Although Turkey is not included in the EU ETS and does not currently have specific emission reduction targets, strong trading links with the EU imply that Turkish businesses are becoming increasingly exposed to carbon legislation. Turkish corporations with installations in the European market are already directly affected by the cap-and-trade legislation imposed by the EU ETS. Under the current third phase of the trading scheme, installations operating in the energy, ferrous metals production, cement and lime, ceramics and bricks, glass and pulp and paper industries, amongst others, are all covered by emission

reduction targets. Furthermore, all airlines servicing Europe are also to be capped, affecting Turkish air carriers¹⁹.

There is also a growing likelihood that the EU will become stricter on imports coming from regions that currently do not put a price on carbon, meaning that other sectors could also be affected. Furthermore, EU accession negotiations are expected to impact Turkey's climate policy, as the integration of EU law within Turkey's legal system is an important aspect of accession negotiations. This is particularly so with regard to important environmental laws, such as those governing the EU ETS. While it is as yet unclear if Turkey will accede to the EU in the near term, integration of key legal frameworks serves to demonstrate accession readiness and can also offer co-benefits where it aligns with Turkey's national objectives.

For these reasons, the Government of Turkey has been taking active steps towards controlling greenhouse gas emissions from major industrial sources, and is exploring with design options and a road map toward implementation of a cap-and-trade system²⁰ to incentivise the Turkish economy to take a cleaner growth trajectory than currently projected under a business-as-usual scenario. An important step towards this integration was recently initiated through the preparation of new legislation to monitor and verify emissions in a range of sectors. The legislation, which was enacted in April 2012, implements key parts of EU's current GHG monitoring and verification regulation. The regulation covers CO₂, N₂O and PFC emissions in the energy, cement, steel and pulp and paper sectors. All regulated installations in these sectors were obliged to report their 2015 emissions before end of April 2016.²¹

Figure 5: Volume of offsets transaction by country (2015)²²



Although Turkey had not been able to tap into the carbon-offset market created under the Kyoto Protocol due to legislative barriers, the country has not been side-lined by the carbon markets. Turkey represents the largest seller of voluntary carbon credits in Europe. Over the period 2007 – 2016, Turkey transacted around 37 million tonnes of CO₂e valued at over USD 200 million. This is equivalent to approximately 70 per cent of total market volume in Europe to date. In 2016, Turkey was responsible for around half of all

¹⁹ For more information, please see: www.ec.europa.eu/clima/policies/transport/aviation/index_en.htm

²⁰ For more information, please see: www.thepmr.org/country/turkey-0

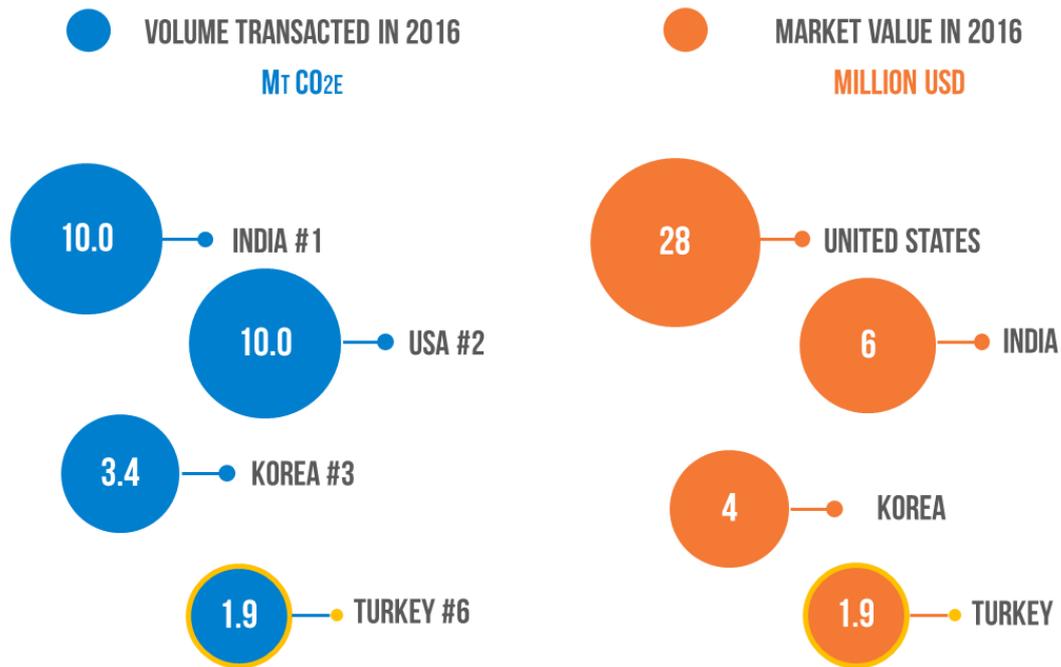
²¹ Turkish Ministry of Environment and Urbanization, Department of Climate Change. Press Release (2011)

²² Adapted from: Ecosystem Marketplace (2016) Raising Ambition: State of the Voluntary Carbon Markets 2016

primary transactions in Europe, amounting to 1.9 million tonnes of CO₂e (see Figure 6). This made Turkey the sixth largest supplier of voluntary carbon offsets globally after India, the United States, Korea, China and Brazil. The majority of Turkey’s voluntary carbon transactions were derived from sales of VERs generated by wind, hydro, and landfill methane projects, and Turkish VER prices in 2016 averaged at USD 1.1.²³

Turkish carbon projects are developed primarily under one of two standards: the Gold Standard (GS) and the Verified Carbon Standard (VCS). Both standards stand out as internationally respected frameworks for the development and implementation of emission reduction projects and credits from each enjoy strong credibility.

Figure 6: Role of Turkey in the voluntary carbon markets in terms of transacted volumes and valuation (2016)



²³ Ecosystem Marketplace (2017) Unlocking Potential: State of the Voluntary Carbon Markets 2017

3

Carbon Market Services for Banks

It is apparent that increasingly more clients serviced by Turkish banks will either face exposure to emission reduction legislation, or will seek involvement in the operation of greenhouse gas mitigation projects that may benefit from selling carbon offsets. Banks are in a strong position to offer services aimed at helping existing and new clients to manage both the risks and opportunities created by both the international and domestic carbon markets. This chapter presents an overview of key carbon market opportunities available to financial institutions and identifies opportunities for engagement in the Turkish market.

3.1 Role of Banks

Banks worldwide have successfully capitalised on early entrance to the carbon markets. International carbon markets are expected to grow as new domestic and regional schemes materialise, especially in the context of a post-2020 climate framework. Turkey is a late entrant to this evolving market, having been side-lined from the possibility to host emission reduction projects under the Kyoto Protocol. However, Turkey's close ties with Europe where the world's largest emissions trading scheme has been operational since 2005 and domestic ambitions to increase energy efficiency and contain the exponential growth in domestic GHG emissions, imply exposure to the carbon markets will rise. Further to this, the Turkish government is currently collaborating with the Partnership for Market Readiness (PMR), a World Bank initiative that promotes market-based instruments for GHG emissions reduction. Combined with the introduction of the Turkish MRV law spearheaded by the Ministry of Environment and Urbanisation, there are signals that some form of regulatory pricing linked to CO₂ content may be launched domestically in the mid-term. As such, EU ETS's existence and the possibility that the Turkish government will advance similar pricing mechanisms presents a strong case for Turkish banks to become involved in this market.

A number of Turkish banks already finance renewable energy and energy efficiency projects and are in a comfortable position to act as the intermediary party between carbon project developers and the investors. In general, financial institutions can support existing and new clients in:

- **Exploring opportunities in the carbon market:** project developers are interested in investigating opportunities offered by the carbon markets and will look for ways to apply carbon financing. Banks can advise these clients on options and offer financing, securitisation and trading support.
- **Managing exposure to carbon risk:** There are a considerable number of Turkish corporations active in the European market that is directly affected by the cap-and-trade legislation imposed by the EU ETS. Banks can help clients understand, anticipate and manage exposure through advisory and trading.

The primary carbon market services identified in this booklet represent services that are regarded as the most commercially attractive for banks to take on board when seeking to enter the current carbon markets around the world. These services are already being or have been successfully offered by numerous international banks operating in the already established carbon markets, such as the EU ETS.

Figure 7: Role of banks in the carbon markets²⁴

3.2 Origination and Project Finance

Rationale

The evolving domestic carbon market creates demand for capital necessary to get new emission reduction projects off the ground, both in the current voluntary carbon market setting as well as a prospective market that will take shape after 2020. This presents banks with opportunities to broaden the client base and increase the investment portfolio. Banks seeking direct involvement with the development of emission reduction projects can build expertise within their project finance teams to:

- Identify GHG emission reduction opportunities suitable for carbon finance;
- Facilitate preparation and sale of the carbon asset;
- Provide financial support through project finance.

Commercial attractiveness

Origination activities create the possibility to increase engagement in the renewable energy and energy efficiency markets. This gives access to a new customer base and gives banks access to long-term financing opportunities, especially in the renewable energy sector. Carbon credits can mitigate cash flow risk by representing an asset that can be monetised, making these projects more bankable.

What other banks are doing

Several banks have set up dedicated origination teams while others entered the market through acquisition. ING, for example, financed a large CFL distribution programme in Mexico, with carbon assets as a key collateral for the loan. Repayment of the outstanding loan is contingent upon successful issuance and sale of the carbon credits.

3.3 Centre of Competence

Rationale

A considerable number of Turkish companies are already exposed to emission reduction legislation abroad. Furthermore, the number of businesses affected will grow as the EU ETS expands its reach and enters the fourth phase starting 2020, and regional and domestic emission offset markets continue to

²⁴ Source: Climate Focus and GAIA (2017)

evolve. Finally, there is a possibility that the government of Turkey will consider the piloting of a domestic ETS in select industrial sectors. Affected companies need to understand both the risks and opportunities presented by carbon markets or new carbon pricing legislation. Banks can build internal capacity to assist clients in:

- Managing risk: managing direct or indirect exposure to legislation;
- Exploring opportunities: exploring domestic and international carbon markets as well as with structuring international climate finance once new financing mechanisms under the Paris Agreement are in place.

Commercial attractiveness

Side-effect: advice given to existing and potential clients on the risks and opportunities presented by carbon markets and international climate finance can generate potential business opportunities services related to the banks' core competence, including managing exposure to risk and provision of finance. In certain cases, banks themselves may be beneficiaries of climate finance, where international climate funds such as the Green Climate Fund take a role of credit guarantors to co-financed assets.

Reputation: in-house understanding of carbon markets will minimise the possibility of clients becoming unexpectedly affected by emissions trading legislation. Banks following the developments in the field of international climate finance may furthermore be able broaden the scope of project finance activities that align more closely with clean energy and energy efficiency investments and have a distinct risk-return profile.

There is a wide range of advisory themes that banks can take on board, including:

- Advising on carbon liabilities and risks;
- Structuring carbon credit transactions;
- Supporting with structuring international climate financing;
- Advising on incorporating carbon finance;
- Advising on new market opportunities;
- Preparing bankable agreements for sale of carbon credits with prospective buyers and sellers;
- Advising on the different carbon standards available.

What other banks are doing

Many banks set up dedicated team specialised in carbon market advisory services, including former Fortis, Standard Bank and ING. These services were often interlinked with other business lines within the banks' operations, such as the provision of corporate and project finance or offering of escrow services. Most banks have meanwhile shut these specialized operations linked to carbon market work as an aftermath of the recession and low carbon prices.

At the same time, the importance of carbon pricing has been rising and is shifting from specialised departments dealing with carbon finance to strategies relevant to risk management departments at banks. As this knowledge is built, banks can also share the information on internal carbon pricing with clients and investors with regards to:

- Identifying and evaluating low carbon investment opportunities that meet defined investment criteria and consider investment vehicles that target low carbon assets subject to risk and return objectives;
- Developing capacity to assess the risks and opportunities presented by climate change and climate policy to investment portfolios, and integrate, where appropriate, this information into investment decisions;
- Working with the companies in which they invest, or which they fund, to ensure adequate disclosure and management of risks and opportunities presented by climate change and evolving climate policy;
- Reporting on actions taken and progress booked by financial institutions in addressing climate risk and investing in areas such as renewable energy, energy efficiency and climate change adaptation;
- Attracting green funding from capital markets and channel to renewable energy and renewable energy investments.

3.4 Trading and Brokerage

Rationale

Banks are a leading player in providing liquidity for traded assets. A growing domestic carbon market creates opportunities for banks to facilitate transactions between buyers and sellers, opening up possibilities to build new relationships and establish new clients. Furthermore, access to balance sheet capital gives banks the option to engage in trading for personal gain. Three types of services include:

- Client trading: buying and selling activities of carbon assets on behalf of corporate clients directly affected by emissions trading;
- Proprietary trading: commitment of own capital for trading for direct gain;
- Brokering: facilitating transactions between sellers and buyers.

Commercial attractiveness

Cost advantage: clients lacking the capacity to engage in trading carbon directly will need support of banks to enable them in cost-effectively satisfying imposed or voluntary emission reduction obligations. By pooling trading volumes from a number of clients, banks can reduce the transaction costs associated with transacting carbon assets.

Margins: early entrants can generate attractive margins through trading as domestically the carbon market is still perceived as a niche, specialist field.

What other banks are doing

Numerous banks previously picked up trading in carbon assets by building on their in-house expertise in energy-based commodity trading, including UniCredit, Deutsche Bank, Goldman Sachs, and Standard Bank. Most banks have meanwhile shut their operations as an aftermath of the recession and low carbon prices.

3.5 Green Bonds

Rationale

Large-scale programmes proposed by commercial or public entities may be interested in raising funds from the broader capital market. Banks already active in issuing bonds for regular ventures can increase their client base by offering issuance services tailor-made to clients that anticipate future revenue streams from carbon offset sales. Green bond issuance reached 81 billion in 2016, a record year representing the doubling of issued volume when compared to the previous year.

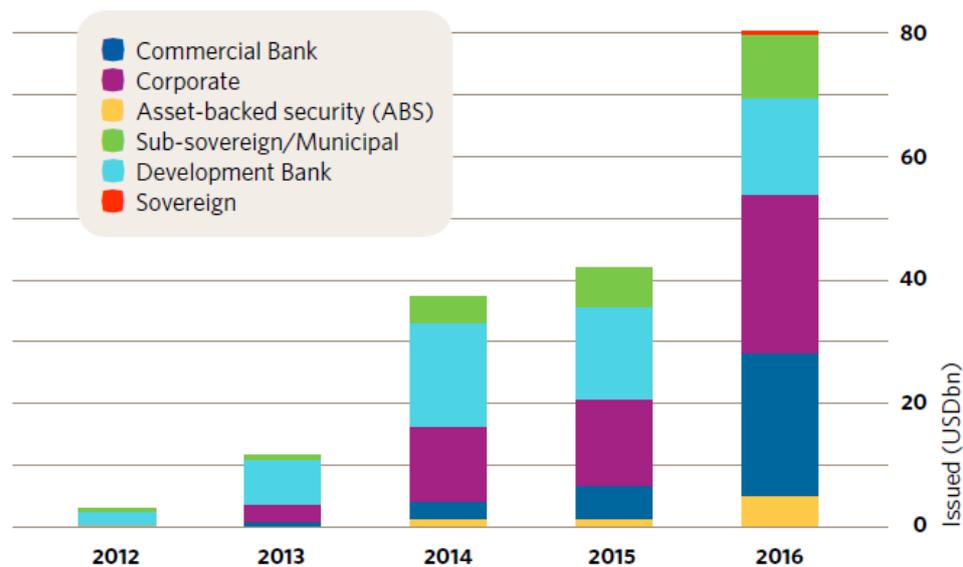
Commercial attractiveness

Climate bonds often offer the same returns as other bonds, but with the added benefit that funds are only going to climate investments. For many investors this is important, including the investors – worth USD 20 trillion – that signed up to the Global Investor Coalition on Climate Change. Climate bonds give issuers the opportunity to attract direct capital to their climate investments. Banks can either raise capital for their own climate investments or assist a corporate or other financial institution with the issuance.

What other banks are doing

Issuance of green bonds has seen a rapid rise over the past years, and an increasing amount of banks (both development and commercial) are pledging funds. According to the Climate Bonds Initiative, Crédit Agricole, Morgan Stanley, Citi Group, HSBC and Barclays represent some of the key players in the climate bond market. Latest issuances include a EUR 7 billion sovereign bond issued by the government of France and structured by Crédit Agricole (tenure of 22 years and a coupon of 1.75%), and a USD 2.2 billion bond issued by the Bank of Beijing (short term tenure of 3 to 5 years, priced in CNY).

Figure 8: Annual green bond issuances (2016)²⁵



3.6 Green Credit Cards

Rationale

The retail business is a key profit centre of many Turkish banks, and domestic credit card use is one of the highest in the world. With each bank offering multiple credit cards to customers, the competition is stiff. Marketing a green credit card that enable carbon offsetting of purchases to clients that value responsible shopping or travelling presents banks with the possibility to introduce a new product on the market and access new customers, while improving the general image and reputation in this competitive market place.

Commercial attractiveness

Reputation: offering a green credit card can enhance the reputational value of the bank through involvement in responsible banking.

New customers: possibility to increase exposure to new, environmentally conscious clients.

Synergies: there is possibility to gain on synergies with in-house carbon trading or origination activities. Carbon credits generated by emission reduction projects in the bank's portfolio can be channelled through to a green credit card scheme.

What other banks are doing

The concept of green credits cards has been gaining popularity and over the years a number of banks have teamed with developers of emission reduction projects to offer clients the opportunity to shop with a conscious mind. Some of these banks are Corner Bank SA, Bank of America Merrill Lynch, and HSBC.

For example, Swiss Corner Bank, in cooperation with an emission reduction project developer, offers Swiss credit card holders the possibility to automatically offset the CO₂ balance accrued due to spending. The offsets are sourced from a number of wind power projects developed by specialised originator.

²⁵ Climate Bonds Initiative (2017) Green Bonds Highlights 2016

4

Annex 1: FAQ on Carbon Markets

What is a carbon credit?

A carbon credit is a term for any tradable credit or allowance representing the right to emit one tonne of carbon dioxide equivalent (tCO₂e) into the atmosphere.

How are carbon credits generated?

Carbon credits can originate from GHG emission reduction projects that deliver measurable reductions in emissions generated by renewable energy, energy efficiency gains, methane destruction activities, etc. Eligibility of project types is dependent upon the type of carbon standard that is applied to certify realised GHG emission reductions. Under the Kyoto Protocol, carbon credits can also represent allowances that are linked to national registries and can be traded between entities with emission reduction obligations.

What is a carbon market?

A carbon market is a market created from the trading of carbon credits to encourage or help countries and companies to meet their compliance or voluntary GHG emission reduction target in a cost-effective way.

What is the compliance carbon market?

The compliance carbon market is regulated by international agreements defined under the United Nations Framework Convention on Climate Change (UNFCCC). In 1997, the Kyoto Protocol to the Convention was adopted, setting the stage for the development of three 'flexible mechanisms' – Joint Implementation (JI), the Clean Development Mechanism (CDM), and emissions trading schemes (ETS). Jointly, these mechanisms make up the largest environmental market in the world and serve to help countries meet their emission reduction obligations by enabling transfers of carbon credits.

What is the voluntary carbon market?

The voluntary carbon market relates to transactions in carbon credits that fall outside the compliance schemes created under the Kyoto Protocol and the EU ETS. Demand for voluntary emission reductions (VERs) is driven by companies that pursue voluntary greenhouse gas emissions targets and intend to demonstrate climate leadership within the industry. The leading market standards in terms of transaction volume are the Verified Carbon Standard (VCS) and the Gold Standard.

How are GHG emission reductions monitored?

Each carbon standard imposes monitoring methodologies that set out the approach for calculating the emission reductions associated with a specific intervention. Methodologies can include parameters that are fixed upfront (defaults) as well as parameters that need to be monitored over the lifetime of the project activity. Across larger programmes, sampling of data points can be applied to reduce the costs associated with monitoring activities. Monitored performance data is compared against a baseline scenario, which is the scenario that reasonably represents the anthropogenic emissions that would occur in the absence of the proposed project activity (i.e. the business-as-usual scenario).

How are carbon credits issued?

Each carbon standard imposes its own procedures relating to the issuance of carbon credits. Information gathered through periodic monitoring activities is required to be submitted in a monitoring report. To ensure consistency, conservativeness and accuracy, this report is subsequently verified by a third-party auditor. When all eligibility criteria have been met, a positive verification opinion is then issued to the governing body of the respective carbon standard, which makes the final decision and issues carbon credits to the account of the project sponsor.

5.

Annex 2: Carbon Trading

The exchange of allowances, or carbon offsets, between parties takes place through trading. The trading is facilitated through specialised exchanges and brokerage firms. For parties to qualify to trading, they must have a registry account set up. The most widely traded carbon assets include:

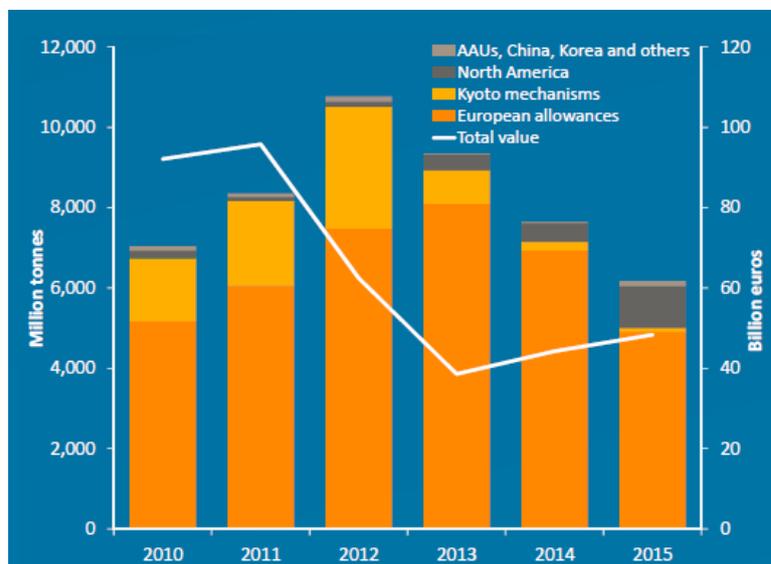
- European Union Allowances (EUAs), issued through the EU ETS;
- European Union Aviation Allowances (EUAAAs), issued through the EU ETS;
- Certified Emission Reductions (CERs), issued through the CDM.

Allowances and carbon offsets can be traded both in spot and derivative markets.

5.1 Spot Trading

Companies covered under the EU ETS are obliged to report annual emissions by 31 March of each year and surrender a corresponding amount of allowances by 30 April of that year. Depending on a company's trading strategy, it may make sense for a market participant to purchase a spot EUA for immediate delivery. Spot products are also available for CERs.

Figure 9: Total value of carbon assets traded, by type (2015)²⁶



Spot trading used to play an important role in the early years of trading. Since the market matured, most of the traded volumes have shifted to futures trading. Some speculation, however, still exists by institutional investors seeking to gain arbitrage profits between the spot-future spread.

²⁶ Thomson Reuters (2016) Carbon Market Monitor

5.2 Derivatives Trading

Over 90% of the trade in EUA and CER products occurs through futures trading. Under a futures contract, a buyer enters into an agreement to purchase the underlying asset for a price agreed today, with the delivery and settlement taking place in a defined point in the future. Companies covered under the EU ETS tend to hedge their exposure to shortfalls in allowances by entering into futures contracts, which enables them to fix prices. Trading in futures of allowances often goes hand in hand with energy trading divisions within the larger utility firms.

Carbon offsets, whether compliance grade or of voluntary nature, can be exchanged through both futures as well as forward contracts. Especially in the voluntary market, non-standardised, bilateral forward contracts tend to be the norm.

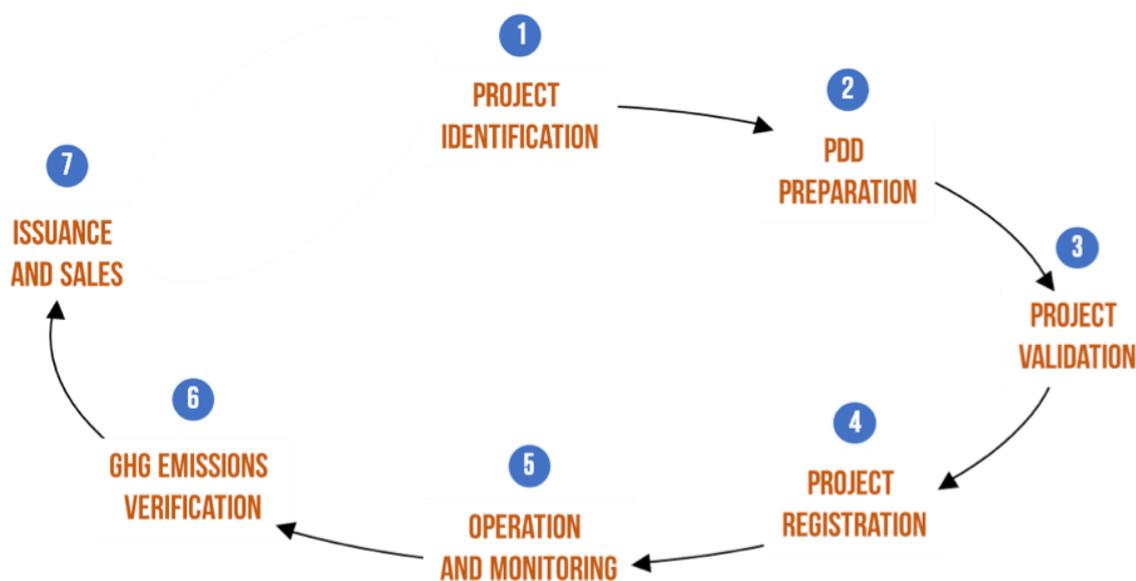
6

Annex 3: Technical Aspects of Carbon Projects

6.1 Technical aspects of offset projects

Projects registered under a carbon standard can generate carbon offsets that are calculated based on the difference between the emissions in a baseline or business-as-usual scenario and the project scenario. In order to register as a carbon offset project, projects need to demonstrate that they would not have happened without the additional revenue from the sale of carbon offsets (a concept known as 'additionality').

Figure 10: Carbon asset development - overview of steps²⁷



As illustrated in figure 10 the carbon asset development cycle starts with the development of project specific documents that present the project's emission reduction potential and evidence the activity's eligibility under a chosen carbon standard. The Project Design Document, generally prepared by specialised consultants, and then validated by an external auditor. Once approved, the project is submitted for registration to the carbon offset certifying body. There are numerous institutions providing such certification services, the most recognised labels including the UNFCCC's Clean Development Mechanism, the Gold Standard, and the Verification Carbon Standard (see Figure). CERs issued by projects developed under the UNFCCC scheme can be used for compliance purposes, such as for example in the EU ETS. The latter two labels serve the voluntary offsetting market.

Carbon offsets are issued once the project is being implemented and actual emission reductions are achieved and verified. The first issuance usually takes place at least one year after the project start date. Issued carbon offsets are delivered to a buyer, who will generally pay upon their delivery (payments may

²⁷ Source: Climate Focus and GAIA (2017)

also occur prior to issuance if sold under a forward contract). Revenues from carbon offsets are a source of income, rather than a source of finance. However, in the past project developers have been able to secure bank loans based on a forward contract to sell the offsets.

6.2 GHG Management

In order for projects or companies to be able to report on their emission (reduction) activities, a GHG Information Management System needs to be in place. This consists of a number of steps:

- Building an inventory of six GHGs (CO₂, CH₄, N₂O, SF₆, HFCs and PFCs) as referenced by the Kyoto Protocol;
- Defining a strategy for reduction of greenhouse gases;
- Identification and management of risks and opportunities stemming from internationally binding climate change abatement treaties and regulations;
- Strategic management for the transition to low carbon economy at the company and product level;
- Defining a road-map for adaptation to physical risks of climate change;
- Incorporation of climate change strategies to Corporate Sustainability Plans.

Figure 11: Methods and standards applicable to managing GHGs²⁸

	Corporate level	Product level	Activity level
Method	<ul style="list-style-type: none"> • GHG inventory (Scope 1, 2, 3) • Carbon Disclosure Project 	<ul style="list-style-type: none"> • Carbon labelling • Life Cycle Assessment 	<ul style="list-style-type: none"> • Events • Conferences • Flights • Tournaments
Standard	<ul style="list-style-type: none"> • GHG Protocol • 2006 IPCC Guidelines 	<ul style="list-style-type: none"> • PAS 2050 • ISO 14064 	<ul style="list-style-type: none"> • ISO 14064

²⁸ Source: Climate Focus and GAIA (2017)