Bloomberg BNA

Daily Environment Report™

Climate Change

Practitioner Insights: Defining Green Finance for Climate Change

By Daniel Rossetto

Green finance is an important and emerging segment of financial markets that holds the promise of delivering environmental benefits that could help tackle climate change. The segment is substantial, with industry groups estimating that green bonds mobilized as much as $150 billion to $200 billion in the last year.

Despite all the potential benefits of green finance, the market segment is bogged down in debate about how to define green finance and what standards to use to certify products.

Being able to quantify impact is especially important when considering green finance, where its purpose targets the generation of climate benefits. Climate change is an area of environmental management that is intensely quantitative and the consequences of inaccurate estimations of impact could be severe.

This paper looks at the issue in more detail and, at the end, proposes a definition for green finance for climate change that addresses the critical issue of quantification of impact.

Daniel Rossetto is chief executive of Climate Mundial, having built the business since its inception in 2012 to now being one of the premier private sector climate finance and sustainable development firms globally. He has led the firm's work on Paris Climate Bond concept development with the UNFCCC and introduced the concept at its launch in New York at the 2016 Investor Summit on Climate Risk with former Executive Secretary of the UNFCCC Christiana Figueres. Prior to Climate Mundial, he was executive director for Environmental Markets at J.P. Morgan. His email is daniel.rossetto@climatemundial.com.

Insurance Protection In order to establish the context for the definition as it applies to climate change, let's look at the analogy of someone buying insurance to protect oneself from a financial loss in the event of a burglary or if a fire burns down one's home. It prompts a series of questions: Is a fire occurring at their house scientifically possible? The answer is yes. How probable is it that a fire or burglary will occur? The answer is not very likely. What would be the consequence of one of these events happening? The answer is a loss for the person or family, which could be catastrophic especially in the case of fire.

The very prospect of catastrophic loss therefore is usually enough to drive people to pay an amount every year to protect themselves against an unlikely event drawing the worst of the consequences. This amount is known as an insurance premium. People also know that insurance companies will not allow them to buy the insurance after the fire occurs. In order to have the protection, the insurance has to be purchased before the unlikely event happens.

Nobody will ever be 100 percent certain that a fire will burn down their house. The fact that consumers buy such insurance is because they consider it is worth paying a little bit today to safeguard against this unsa-

 ISSN 1060-2976

vory and unlikely future event. It has the additional benefit of buying peace of mind even if the catastrophic event never occurs.

Another way to describe this is to say people are using what is called the ''Precautionary Principle.'' One also could suggest that the act of buying home or property insurance is quite similar to what society might do to manage the risks posed by climate change.

Consequences of Climate Change Now let's look at what we do know about climate change.

We do know that certain human activity—burning coal and other fuels for example—puts greenhouse gas into the atmosphere. We know that the levels of greenhouse gas in the atmosphere have been consistently climbing since industrialization began in the mid-1800s. We also know that global average temperatures have been increasing during the past 200 or so years. That's about it for the things we can measure and know with absolute certainty. This is where it starts to become more difficult.

Scientists have strong evidence that one of the main causes of global average temperature rise is the emission of greenhouse gases from human activity, but this cannot be proved beyond any doubt. They also have a fair amount of evidence that warming temperatures will trigger more frequent and more severe weather events, like hurricanes, cyclones, floods, brush fires, and droughts. Many of us can sense this is true when we see such weather unfolding in our communities.

Let's return to the questions we asked about home insurance and see how they also could apply to climate change. Starting with the first question, is climate change scientifically possible? The data indicates that the answer is yes. How probable is it that climate change will occur? The answer here is not absolutely certain, yet probability suggests it is very likely. What would be the overall consequence of climate change? The answer, if the worst effects occur, is catastrophic loss not just for individuals, families, and countries, but also for society as a whole.

It is not rational for people to say they know—or do not know—with absolute certainty that human-induced climate change is happening. The only rational thing to do is to consider the balance of probabilities, as well as the possible worst consequences, and then make a reasoned choice about whether and how to manage the risks that are posed.

The case for taking action on climate change is similar to the case for buying home insurance. The main difference is the level at which the action is organized. The decision to buy home insurance is an action taken at the household level. Climate change is a global challenge and in order to have any chance of being effective, solutions have to be coordinated at a societal or community level. Basically, managing climate risk forces countries and firms to cooperate globally.

This is an important point: Actions taken to manage climate risk, sometimes referred to as mitigation, will be effective only if they are coordinated at the societal and global levels. Private individuals wishing to protect themselves without working at the societal level would be prone to focus on managing only the consequences of climate change, which is sometimes referred to as adaptation. On their own, nobody can be sure that the insurance they are ''buying'' will stop the worst consequences of climate change.

Carbon Budget The questions we need to ask as a society are therefore quite similar to buying home insurance, including how much loss do we need to insure against and what is the best way to get the lowest cost premium on that insurance for the given amount and quality of cover we seek?

The 197 governments that met in Paris in 2015 for the United Nations climate summit have already provided plenty of guidance. Under the Paris Agreement, we should aim to limit the rise in global temperature to 2 degrees Celsius by 2050 from a base year before industrialization of 1860 to limit the worst consequences of possible climate change.

The scientists who advise the U.N. on climate change, sometimes referred to as the Intergovernmental Panel on Climate Change (IPCC), also gave governments a really clear target for total emissions with which to work. In order to be reasonably confident of achieving the 2 degrees Celsius goal, scientists recommended that countries limit global emissions greenhouse gas to just over 995 billion tonnes between 2011 and 2050.

We can call this 995 billion target the carbon budget. The greenhouse gases themselves can be called the environmental externality. Simply put, an externality is an activity carried out by an entity that creates a negative impact for society and the entity is not compensating society for it. An example of an externality could be a factory that uses a river, which is public property, to discharge its pollution, without assuming responsibility for cleaning up the pollution or compensating the community for the consequences of that pollution.

To put the carbon budget in context, in 2012 the IPCC estimated that around 50 billion tonnes of greenhouse were being emitted annually worldwide. Without action to reduce emissions, the baseline assumption is the carbon budget for achieving the 2 degree Celsius goal will be fully consumed by around 2031.

So, we seem to have the answer to the first question: For how much loss do we need to insure? The answer is obvious: We need to limit emissions of greenhouse gas to 995 billion tonnes between 2011and 2050.

We also have to decide the best way to get the lowest cost of the premium on that insurance, while ensuring that the insurer we choose is reliable and of sufficient quality.

Green Finance in Theory Under the Paris Agreement, governments have agreed to allow every country to make its own decisions, which seems sound. The agreement does allow countries to cooperate and, more important, it engages the U.N. to monitor whether the combined effort will, or will not, keep the world under the 995 billion tonnes.

The Paris Agreement also introduces a new idea that a certain amount of new finance should be allocated—not just by governments, but also by entities—to activities that can reduce emissions or help mitigate the effects of climate change.

This activity is known under the Paris Agreement as climate finance. In the broader financial markets, financing for climate is taken to be a subset of a broader pursuit called green finance. For the purpose of this paper, let us call this green finance for climate change. There is no common understanding among governments and entities, let alone members of the general public, however, as to what green finance actually is or what it should deliver.

  DEN ISSN 1060-2976

Green finance is one of the most important tools society has to keep the costs of our climate insurance as low as possible. It is time that a clear and universally agreed definition for green finance—at the very least for green finance that focuses on the issue of climate change—be established.

First, let's look at what really would give society the most cost-effective way of buying the insurance needed to reduce climate risk to acceptable levels. This could be thought of as the ideal scenario.

Arguably, the lowest cost way of limiting emissions to the 995 billion tonnes is by using market forces. To do this, we create a global system of carbon permissions.

Those in possession of the permissions would be entitled to emit tonnes of greenhouse gas equal to the number of permissions they have. The permissions would be like property rights: Once you owned one it could not be confiscated, but they could be bought and sold. The carbon budget would mean there is a scarcity, leading to a price for them.

Entities could evaluate the cost-effectiveness of buying permissions needed to emit greenhouse gas versus the cost of reducing the emissions themselves. At a certain point, reducing emissions would become the most economically feasible way to proceed.

The advantage of this approach is the permissions also could be created by investing in projects and activities that reduce emissions, provided the reductions are real and would not have otherwise happened. Having already looked at what an externality is, we could call this the creation of a positive climate externality.

Green Finance in Practice Realistically, the ideal solution described here is not anywhere even close to being implemented. International political processes dictate that it will take more time to reach agreements on this.

That doesn't mean to say it won't happen in the future. Indeed, very positive developments in this direction are occurring right now, with the implementation of the China emissions trading scheme and the South Korean ETS. They have carefully considered the policy options and decided to pursue the market-based emissions trading approach, which also is underpinned by the establishment of tradable permissions.

The important thing, though, is to keep that ideal situation in mind when we try to define green finance. After all, our hope is that green finance for climate change is going to make a contribution toward achieving the 2 degrees Celsius goal at lowest possible cost to society. In insurance terms, we are looking for the maximum effective cover at the lowest premium.

It is therefore important that all green finance, where its purpose is to deal with climate change, work toward the same form of climate insurance being targeted under the Paris Agreement.

With that in mind, here is the basic definition of green finance for climate change:

''Any finance—or financing instrument—that either causes, enables, or supports the delivery of a positive and quantified climate externality.''

To qualify for this definition, the green finance for climate change action also must produce a quantified positive climate externality that would not otherwise have happened. It must therefore be additional to business as usual. The term quantified here refers to the difference between what would have happened without the activity (baseline) and what happens because of the activity's implementation. In the case of green finance for climate change, it is equally critical that the standard for quantification be the same that is used in all other countries. Without such standards, the risk of missing the carbon budget is too great.

For example, what would happen if society were relying on green finance for climate change actions across the world, only for the U.N. to discover later on that a significant error existed in some countries that had led to a gross overestimation of the number of positive externalities created? What if, by the time this was discovered, the carbon budget had been fully consumed? This could invalidate the effectiveness of the very insurance being procured.

It is important to note that this may not necessarily apply to other non-climate forms of green finance, such as the discharge of pollution into a river, as we considered earlier, which concern themselves with a local externality rather than a global externality in the case of climate change and one whose consequences are probably irreversible. One may be able to rehabilitate a river, but not reset the climate.

Recognizing Property Rights The positive externality should be recognized as a property right under international and domestic law. For those with an interest, the thinking as expressed in this paper has been greatly influenced by the work of Ronald Coase, Nobel Laureate for Economics and his paper, ''The Problem of Social Cost,'' originally published in 1960, which makes the case for property rights associated with the creation of positive externalities.

Recognition of the environmental benefits as property rights is crucial for a variety of reasons. It means entities can exchange the outcomes and governments can create incentives to invest in positive externalities.

Property rights also allow citizens and members of society negatively affected to protect themselves by asking courts to stop entities' negative activities where they are not in possession of such property rights. This process is known as seeking injunctive relief and takes the place of needing to prove in a court that a person has suffered a loss due to the activity. This is possible only where the property rights are recognized under law.

The positive externality should only be claimed or counted by one firm or party at a time.

The very notion of there being a budget implies that practices leading to double counting and double claiming need to be avoided. To achieve this, in the longer term it may be necessary to introduce a global registry of the positive externalities, which can assist in tracking title to the property rights.

The finance or financial instrument can be in any form, provided that it meets the definition of causing, enabling, or supporting the delivery of a positive and quantified environmental externality.

Finance—or financial instruments—can include a variety of products. Some examples include equity, debt, grant, or purchase and sale contracts. Others include risk management tools such as investment guarantee, insurance product or commodity, credit, or interest-rate derivatives. What is important for green finance for climate change is not the type of finance or financial instrument, but whether it creates a measurable positive externality and that it is claimed or counted by only one firm or party at a time.

With this in mind, we hereby propose the following consolidated definition:

Green finance for climate change is any finance or financial instrument—including equity, debt, grant, purchase and sale or risk management tool (for example: investment guarantee, insurance product or commodity, credit, or interest-rate derivative)—issued or made in exchange for the delivery of positive climate externalities that are real, verified, and additional to business as usual, whereby such positive externalities result in the creation of transferable property rights recognized within international, regional, national, and subnational legal frameworks.

If we seriously apply this definition, the standards for green finance for climate change will flow as a consequence. The focus will move quickly to delivering quantified results commensurate with the amounts needed to effectively manage the risks.

The critical factor will be whether activities create the positive climate externalities and, if so, in what quantity for what cost? Society will be able to measure the contribution of green finance for climate change in what is, as mentioned earlier in this paper, an inherently quantitative area of environmental management, built on robust economic foundations.

At this point and, in conclusion, I would like to recall the words of Italian scientist and philosopher Galileo Galilei: ''Everything we can measure, we should measure. Everything we cannot measure, let us make measurable.''

Although Galileo lived around four centuries ago, his words are especially relevant to green finance for climate change as it stands today.

—Bruce Tozer contributed to this article.

Bruce Tozer is chairman of Climate Mundial, where he has co-developed the Paris Climate Bond concept with the UNFCCC. He is also nonexecutive director of MP Evans Plc. Previously he was global head of Environmental Markets at J.P. Morgan from its inception in 2006. He has held a number of global head roles at Rabobank International in project finance, structured trade, commodity finance, and corporate M&A, and has built and managed teams in multiple emerging markets and has extensive experience working with IFC, EBRD, World Bank, and U.N. entities. His email is bruce.tozer@climatemundial.com.

The opinions expressed here do not represent those of Bloomberg BNA, which welcomes other points of view.

  DEN ISSN 1060-2976