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With the recent presidential push for climate change legislation, it is now more important than ever to understand the underlying fundamentals of a key aspect common across all climate bills ??? the issue of carbon offsets. The most recent bill, the American Power Act (APA), proposed by Senator John Kerry and Senator Joe Lieberman, specifically provides for up to 2 billion offsets/annum spread across international and domestic projects. That???s a significant volume, considering that it translates into almost 40% of the total cap and trade expected until 2020.?? It will be one of the largest and most intensely scrutinized markets of all time apart from being one of the key mechanisms by which emission reductions are actually achieved. The sheer variety of project types, locations and, standards frequently make carbon trading appear to be as complex as astrophysics for most of us on the ground.

Fortunately though, the last few years of carbon trading and project development in voluntary markets and as part of the Kyoto Protocol have clarified the essential characteristics of good projects.?? These common principles define good and reliable emission reduction projects from not-so-desirable ones. Faced with a multitude of carbon offset standards (administered by as many independent certification bodies that certify carbon offsets according to a list of predefined criteria), it is important to keep one???s eyes on the prize ??? real, verifiable emission reductions.?? In other words, a carbon offset must represent a verified actual ton of CO₂ reduced uniquely, without adverse effect on the socio-economic environment, and in addition to any emissions that may have been reduced as a matter of course.

There are 5 key aspects of a carbon offsets:

1.?? **Project Type** ??? Emission reduction projects can be of several types. The most common are renewable energy in the form of wind, solar, biomass, hydro and other types of power projects. A very large proportion of carbon credits in the world today have also come from industrial gas projects, which are primarily project which destroy HFC and N₂O gases. Other popular projects include landfill methane destruction or energy generation, waste heat to power for increased energy efficiency, afforestation or reforestation, destruction of ozone-depleting substances such as CFCs, mass transportation systems.

Over the years a preference has evolved for offsets from projects with high community and social co-benefits, such as renewable energy, forestation, distributed projects such as solar lanterns and use of CFL bulbs.

2. **Project Location** ??? While projects can be located anywhere in the world, purchasers of carbon offsets often prefer projects to be in locations where they have a presence, or where such projects would be of maximum benefit to the local community. Projects in developing nations and least developed countries (LDCs) across Asia and Africa have emerged as the offsets of choice. This is now undergoing a sea-change as developed nations encourage more in-country abatement as well. Under the APA, the majority of offsets are expected to come from domestic US projects. The fact does remain that a ton of CO₂ reduced anywhere in the world has the same overall impact, as long as the emission reduction is genuine and verified according to a robust standard.

3.?? **Vintage** ??? This is the year in which the particular carbon offset was generated. Several carbon offset standards now limit the retroactive crediting of projects, and also stipulate project start dates to ensure newer projects come into the program and older ones which may not have required carbon revenue to be feasible are eliminated in the screening process. The main objective is to conform to the principle of ???additionality???, i.e., to ensure that only projects which would not be feasible without carbon revenue eventually qualify for carbon offsets.

4.?? **Project Size** ??? It is often argued that the bigger a project is, the less dependent it be will be on carbon revenue

to make it operationally feasible. However, purchasers often prefer smaller projects to ensure integrity. While it is true that in the early days of the carbon market there were large projects that capitalized on the new mechanisms for extra revenue, the scenario today has vastly changed. Very large projects are now being planned and implemented in which future carbon revenue plays an important role. As banks and financial institutions have now become quite comfortable with carbon finance, these future cash flows often play an important part in achieving financial closure at a project planning stage, with carbon offsets becoming collateral for funding today. Going forward, the role of carbon offsets in encouraging larger and more diverse project types from coming up is only set to increase.

5.?? Carbon Offset Standard ??? One could say there are too many! The most prolific standards in the carbon market today are the Clean Development Mechanism and the Voluntary Carbon Standard, directed towards compliance and voluntary purchasers respectively. However, there are several other standards in the market that emphasize specific aspects of projects. For example, the Gold Standard ensures the projects it certifies have very high social and community co-benefits. The Climate Community and Biodiversity Alliance certifies forestry projects according to specific criteria designed for that sector. In the US, the Climate Action Reserve is focused on projects in the US, Canada and Mexico, and emphasizes non-renewable energy projects that are already covered under the REC mechanism. As the market continues to grow consolidation of standards is likely to occur. It is also likely that additional certifications will be available to go along with the major quantification methodologies, to certify that projects have additional benefits.

Although cap and trade under the APA is proposed to start in 2013, several organizations are already looking at building up a portfolio of carbon offsets that may be eligible under the finalized scheme. This can be a highly beneficial initiative. Once the provisions are finalized and the market knows what to expect, prices will suddenly rise and building a carbon portfolio will become an expensive proposition. By keeping in mind the above main aspects of a carbon offset, companies with future carbon liabilities can effectively select from the plethora of projects out there today, and choose carbon offsets that will enable them to meet their emission reduction targets at an optimal cost.