

# Climate Policy Brief

April 2014

Best Practice Demonstration by Doing

Axel Michaelowa, Tanya Petersen, Sven Feige, Alberto Galante, Steve Thorne, Morten Pedersen

## Suppressed demand: A new climate finance approach to avoid carbon lock-in and deliver clean development to the world's poorest communities

### 1. Executive Summary

Addressing climate change is a key challenge of the 21st century. In order to avoid the worst impacts of climate change – including loss of land through rising sea levels and water scarcity and food insecurity caused through more extreme weather events – we need to rapidly decrease greenhouse gas emissions to stabilize their concentration in our atmosphere.

We cannot tackle the climate change challenge without tackling the development challenge. Billions of people still lack access to basic goods and services including safe drinking water, proper sanitation, electricity, housing and transport. We need to ensure that development takes place but without the use of high carbon, cheap and obsolete technologies so that greenhouse gas emissions are prevented from “going through the roof”. Indeed, driving emission reductions and sustainable development are the twin mandates of the Clean Development Mechanism and as attention focuses on Nationally Appropriate Mitigation Actions (or NAMAs) in international climate negotiations the sustainable development focus is becoming more prominent.

We therefore must both reduce emissions from already industrialised economies AND ensure that poorer and not yet-industrialised countries develop with low-emission technology to avoid that they become the emitters of the future. The two go hand in hand – there is no point reducing emissions in country A while country B develops on a high-carbon path and eventually becomes a worse emitter than country A.

So far the Clean Development Mechanism and voluntary carbon markets have not reached the poorest countries. Currently, carbon credits are only granted for the reduction of existing greenhouse gas emissions, but current emissions of poor people are very low, meaning that projects that improve access to goods and services through low-carbon technologies will thus earn no or few credits. How can global climate finance therefore prevent “carbon lock-in” in countries that are currently poor but likely to develop rapidly in the future?

The concept of suppressed demand has been developed to address this undesirable situation and prevent a high-carbon development pathway. In basic terms, suppressed demand is the situation where access to goods and services is insufficient due to poverty or lack of modern infrastructure. Rather than wait until

#### Contents:

1. Executive Summary
2. How demand for key goods and services in developing countries is suppressed
3. A decent life requires a minimum amount of goods and services
4. How to operationalize the suppressed demand concept
5. The Gold Standard's work on suppressed demand
6. The suppressed demand concept combines sustainable development and emission reductions
7. Why offset credits under suppressed demand are not “hot air”
8. Conclusion

emissions have increased along with development, providing emission credits for suppressed demand delivers the finance for a country to use low-carbon technologies from the outset. Carbon market revenues allow the “leapfrogging” of high-carbon, business as usual technologies to cleaner ones that are based on renewables and/or increased efficiency.

The Gold Standard supports expansion of this concept and has developed suppressed demand methodologies for rural electrification, biomass cook stoves, food processing and food preservation. Projects using these approaches will lead to emission reductions long after the last carbon credit has been granted to them. Suppressed demand is thus crucial to ensuring in short-term the access to the poor, of low-carbon goods and services, while preventing significant emissions increases, and carbon lock-in, in the medium to long term.



## 2. How demand for key goods and services in developing countries is currently suppressed

The biggest development challenge enshrined in the Millennium Development Goals is to lift the desperately poor out of poverty. These people do not have ready access to clean water, healthy and nutritious foods, modern fuels, electricity, appropriately heated or cooled housing and modern forms of transport and waste management. More than 2.8 billion<sup>1</sup> people still rely on the traditional use of – increasingly non-renewable - biomass (such as wood or charcoal) for cooking, which emits harmful indoor smoke causing respiratory and other illnesses. 2.4 billion do not have access to basic sanitation. Over 1.4 billion<sup>2</sup> people are currently without electricity access, and about 1 billion<sup>3</sup> people live in slums. Almost 900 million<sup>4</sup> people are chronically undernourished while close to 800 million people lack access to clean drinking water.

The goal of all development institutions is to provide sufficient income opportunities to the poor to afford these goods and services. This is done through overcoming barriers that prevent access such as poor or ineffective governance that artificially increases costs of goods and services, the absence of infrastructure, benefits of economies of scale, viable markets, rugged topography and climatic variability. Despite decades of efforts and huge progress in some regions such as East Asia, a world free of poverty is still a vision that is far from being realized.

In line with the very nature of development, on the way out of poverty the consumption of basic goods and services will increase greatly and this, under a business as usual scenario, will lead to a large increase in greenhouse gas emissions. Herein lies the challenge – how to reduce emissions while fostering sustainable development?

---

<sup>1</sup> [http://www.se4all.org/wp-content/uploads/2013/09/Special\\_Excerpt\\_of\\_WEO\\_2010.pdf](http://www.se4all.org/wp-content/uploads/2013/09/Special_Excerpt_of_WEO_2010.pdf)

<sup>2</sup> [http://www.se4all.org/wp-content/uploads/2013/09/Special\\_Excerpt\\_of\\_WEO\\_2010.pdf](http://www.se4all.org/wp-content/uploads/2013/09/Special_Excerpt_of_WEO_2010.pdf)

<sup>3</sup> [http://www.unhabitat.org/downloads/docs/4631\\_46759\\_gc%2021%20slum%20dwellers%20to%20double.pdf](http://www.unhabitat.org/downloads/docs/4631_46759_gc%2021%20slum%20dwellers%20to%20double.pdf)

<sup>4</sup> <http://www.fao.org/news/story/en/item/161819/icode/>

### 3. A decent life requires minimum/sufficient goods and services

At what point does a person have sufficient access to goods and services to emerge from poverty? What is needed to lead a decent life, at which demand is no longer seen as suppressed? While this question is not easy to resolve, there are benchmarks defined by international organizations for some types of goods/ services. For example, according to the World Health Organization, 7.5 litres<sup>5</sup> of safe water per person per day are required for drinking, hand washing, washing food items and cooking. Similarly, minimum room temperatures of 19°C at 50% humidity are recommended to keep healthy. A universal application of the suppressed demand concept would develop an array of such benchmarks, which should be conservative, easy to understand and based on consistent approaches. The availability of such benchmarks will also help international climate negotiations, as they facilitate definition of the level of baseline emissions linked to basic services that allow a decent life. These baselines will be crucial for the specification of contributions by all countries to global emissions reductions in the run-up to the Conference of Parties in Paris in 2015. This approach also fits with the differentiation between “survival” and “luxury” emissions that has been proposed by a number of developing country representatives.



### 4. How to operationalize the concept of suppressed demand for the carbon markets

The key reason that carbon market projects in poor regions are unattractive to project developers is that the baseline emissions from which the reductions are calculated are set at zero or very low levels. Projects then yield very low numbers of carbon credits and related revenues. To change this, the suppressed demand concept needs to be applied for the calculation of baseline emissions. In order to calculate baseline emissions, in addition to the benchmark service level described above, we need to define the technology/ies and fuel (or energy sources) used in the baseline.

We need to ensure that we do not assume unrealistically high levels of usage of certain high-carbon technologies. One will, for example, not use large numbers of candles in an urban apartment, but incandescent light bulbs. A villager would most likely use a kerosene lamp instead of candles. Only the most destitute people, who could not afford such a lamp, would use candles. Therefore, depending on the total service level defined, the baseline will consist of a series of technologies applied for certain “tiers” of service. For lighting, one would start with candles up to a certain amount of lighting services, and then continue with kerosene pressure lamps to another, higher service level, before incandescent light bulbs would become the baseline technology. In another example, for clean water supply projects in a rural context, where the households are not connected with a piped water supply network, boiling water can be assumed as the baseline technique to treat water but taking into account the penetration rate of non-GHG emitting treatment techniques like chlorine tablets.

Some approaches to suppressed demand might apply a gradual reaching of the benchmark service level instead of an instantaneous one. This approach would be appropriate for parameters like indoor temperature or for improvements in infrastructure like access to all-weather roads.

Please refer to the methodologies on the GS website <http://www.goldstandard.org/energy/methodologies> to find further information about how the suppressed demand concept is applied for setting the baseline.

<sup>5</sup> [http://www.who.int/water\\_sanitation\\_health/publications/2011/tn9\\_how\\_much\\_water\\_en.pdf](http://www.who.int/water_sanitation_health/publications/2011/tn9_how_much_water_en.pdf)

## 5. The Gold Standard's work on suppressed demand

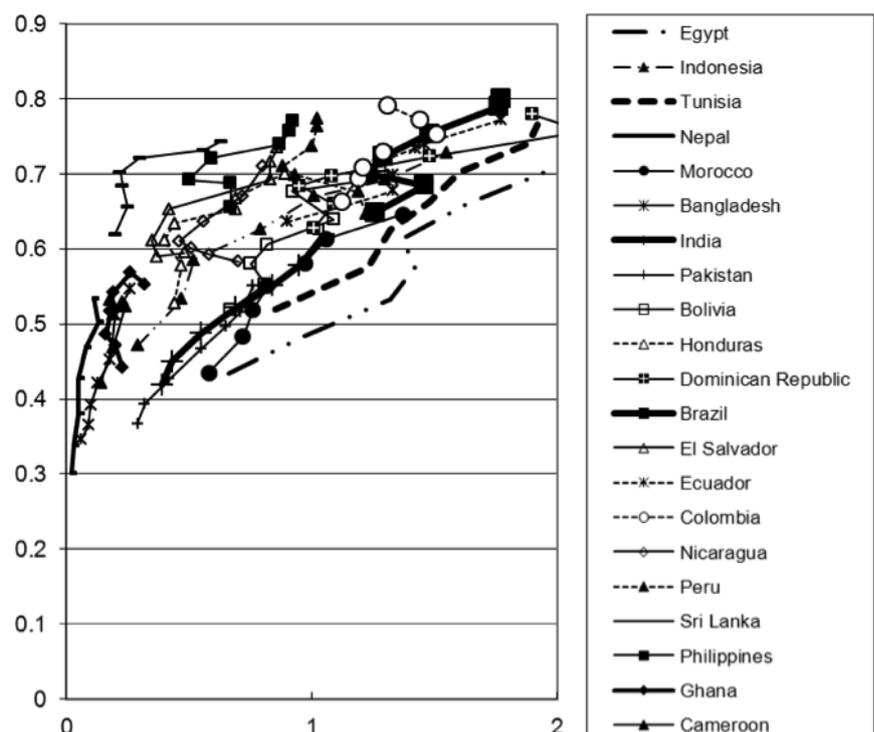
Although, until now, very few projects have been developed, the concept of suppressed demand is already applied in carbon markets. Clean Development Mechanism regulators have understood the importance of suppressed demand in order to increase the number of CDM projects in the poorest countries and support the development aspect of the CDM. In July 2011, the CDM Executive Board adopted the "Guidelines on the consideration of suppressed demand in CDM methodologies" and embarked on a work programme to internalise the concept into existing and new methodologies. The Guidelines apply the concept of a minimum service level discussed above. They also specify how the baseline technology should be defined. They operationalize a decision already taken in 2001 that baselines could include a scenario where future greenhouse gas emissions will rise above current levels.

The Gold Standard, which has a holistic climate and development approach to every project, is expanding on the CDM guidelines and field-testing different robust approaches to quantifying real and measurable emissions reductions under the concept of suppressed demand.



## 6. The suppressed demand concept combines sustainable development and emission reductions

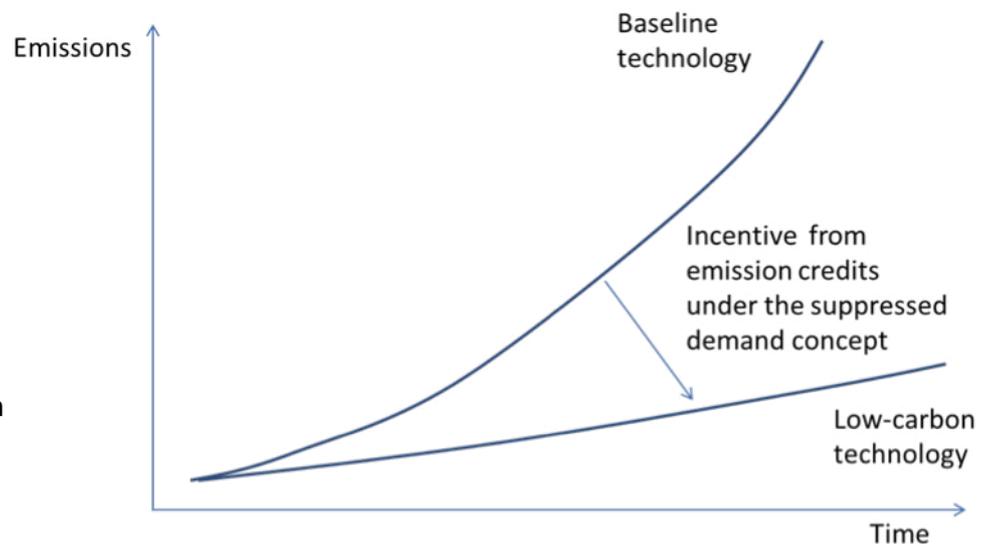
As they develop, poorer countries will inevitably increase their consumption of goods and services. Under a business-as-usual development path, high-carbon technologies will be locked in for many decades. The fact that emissions increase with the level of development under business-as-usual is illustrated by Figure 1.



**Figure 1: Emissions increases under business-as-usual development 1975-2005**

The vertical axis shows the Human Development Index, the horizontal axis per capita emissions. The paths cover the period between 1975 and 2005.

The key question is whether the increased volume of goods and services will be produced by low or high carbon technologies. Under a business-as-usual development path, high-carbon technologies will be locked in for many decades (see Figure 2). This must be prevented by providing incentives for low-carbon technology use in the early phase of the development process. Such incentives can be incrementally increased through carbon finance using a suppressed demand approach – without this, climate finance will simply not reach areas that do not consume goods and services in sufficient quantities for viable market approaches. For example, in the past, CDM projects that introduced modern wastewater management in areas lacking wastewater management were unable to earn emission credits because baseline emissions were assumed to be zero. This was due to the fact that untreated wastewater does not emit methane if discharged into rivers and streams. With a suppressed demand approach, the baseline now assumes introduction of the cheapest, high emitting, wastewater treatment possible - simple lagoons that emit methane. If the carbon price is high enough, this will provide sufficient incentives to introduce low-methane technologies.



**Figure 2: Prevention of high carbon lock-in**

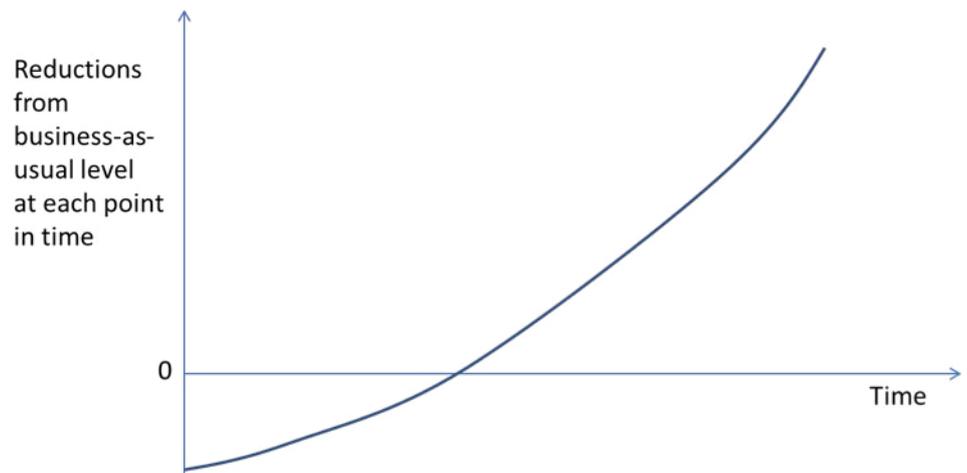
The suppressed demand concept is a necessary incentive/contributor to bringing low-carbon technologies to areas that are just embarking on their development process.



## 7. Why carbon credits under suppressed demand are not “hot air”

Critics have argued that emission reductions under the suppressed demand concept are not real because they are contingent on people’s incomes rising sufficiently for them to, for example, afford the fuel and fire to boil their water to make it safe to drink. They also say that the level at which demand is no longer suppressed is pure guesswork.

This criticism completely ignores the long-term lock-in of baseline technologies that increase emissions over decades. If people do not get the modern water filter, they will boil water using fossil fuels. If modern wastewater treatment does not receive emission credits, anaerobic lagoons will emit methane for decades. This situation is depicted in Figure 3. Compared to a business as usual level, in the initial years of the project no reductions accrue while credits are issued. Thus emissions reductions achieved are negative. Once development picks up and the production of goods and services expands, using business-as-usual technologies under the baseline leads to an emissions increase. Due to the low-carbon technologies introduced by the project, emissions are reduced.



**Figure 3: Emission reductions under suppressed demand compared to a business-as-usual baseline**

Hot air is the label given to carbon credits generated by emissions decreases due to the reduction of industrial production, for example, during an economic downturn. On the contrary, due to the technological leapfrogging involved, the suppressed demand concept leads to long term emission reductions beyond the volume of emissions credits granted.



## 8. Conclusion

The suppressed demand concept is necessary to reconcile development and low-carbon technologies. Outside of carbon markets, the need for development is fully recognized. In the international climate negotiations, nobody seriously proposes that developing country emissions have to be frozen at the current level. But this is exactly what is assumed if the baseline emissions level for a carbon market project leading to development is set at zero. All parties accept that development leads to an increased consumption of goods and services - and this needs to be the case for the carbon market as well. Only a realistic development baseline is fully consistent with the sustainable development pillar of the CDM and also with intensity targets used by many developing countries. On the other hand, the benchmark levels for consumption of goods and services allowing a decent life needs to be defined carefully to avoid an overestimation of emission reductions. The development of Gold Standard suppressed demand methodologies has shown that there is no general answer for an appropriate service level and the related technology and fuel combination. Thus, a case by case evaluation is required.

Through the technology leapfrogging effect of projects incentivized by emissions credits, long-term emission reductions are achieved. Suppressed demand is thus diametrically opposed to hot air: hot air is business-as-usual; suppressed demand prevents business-as-usual.



**The Gold Standard Foundation**

Avenue Louis-Casai 79  
CH 1216  
Genève-Cointrin  
Genève

[www.goldstandard.org](http://www.goldstandard.org)

+41 22 788 70 80

[info@goldstandard.org](mailto:info@goldstandard.org)