



The Carbon Footprint of Products: a powerful tool to support existing market dynamics in favour of a low carbon economy

The international political negotiation on climate change shows that a top-down approach is not the only way to effectively fight the anthropogenic climate change: also the market can substantially contribute. The existing mechanisms (ETS, CDM and JI) and the carbon tax have been able to generate a new economic value through the carbon price but it shall be considered only the first step towards this direction. Another important economic contribution is expected by the CFP, with its capacity to create new dynamics between producers and consumers. A fair implementation is needed to fully exploit the CFP opportunity, to carefully take into consideration risks of any possible market distortion, in order to facilitate the creation of a low carbon path, both in developed and developing countries.

A specific interest is expected by the food sector, where the CFP may play a central role to facilitate the promotion of low-distance consumption, also known as “0 km supply”

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La Carbon Footprint dei Prodotti (CFP): uno strumento potente a supporto delle dinamiche di mercato a favore di un'economia a bassa emissione di carbonio

Le trattative politiche internazionali sul cambiamento climatico mostrano come l'approccio calato dall'alto non sia l'unico modo per combattere efficacemente il cambiamento climatico antropogenico: anche il mercato può contribuire in maniera sostanziale. I meccanismi esistenti (ETS, CDM e JI) e la tassa sul carbonio hanno generato un nuovo valore economico mediante l'attribuzione di un prezzo al carbonio, ma sarà solo il primo passo in questa direzione. Un altro importante contributo economico è atteso dalla CFP per la sua capacità di creare nuove dinamiche tra produttori e consumatori.

Per valorizzare appieno l'opportunità offerta dalla CFP di tener conto di tutti i rischi di qualunque eventuale distorsione del mercato, al fine di facilitare la creazione di un percorso a bassa emissione di carbonio sia nei paesi industrializzati sia in quelli in via di sviluppo, è necessario che venga applicata correttamente.

Un interesse particolare è previsto nel settore alimentare, dove la CFP può avere un ruolo chiave per facilitare la promozione del consumo dei prodotti cosiddetti “a km zero”

A top-down approach is not enough

Climate change seems to be a problem of eyesight defect. On the one side scientists may be considered

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“far-sighted”, as they concentrate on what it will probably happen far from now, in the next decades or, more likely, at the end of the century. That will happen when it is virtually certain that nobody among who is writing or reading this article will have the opportunity to experience the correctness of any climate model projection.

On the other side, politicians are strongly affected by myopia, considering that they generally focus their attention on what it may happen during the few years of their mandate or, in the worst case, on the results of daily polls¹.

Out of focus in between, there is the destiny of billions of people, partially responsible of global warming with their behaviour as well as affected by the consequences of the ongoing changes.

In 2009, during the preparation of COP15, the former UNFCCC Executive Director, Mr. Yvo de Boer, repeated as a mantra that the solution for the climate crisis had to be found right there in Copenhagen because “there is not a Plan B”². Nonetheless, the call for a deeper commitment of the Parties did not work and the plan A failed without excuses³.

Today, the three-year track of the Durban Platform⁴ (which was agreed last year) roughly reproduces the aim of the two-year Bali Road Map (2007) and it seems very similar to the kind of Plan B mentioned by Mr. Yvo de Boer.

The hope is to achieve plan B: that would be enough to stop the most dangerous consequences of climate change by maintaining the increase in temperatures below 2° C. Observing the negotiation process of the latest years, it is easier to find difficulties rather than a substantive will to move together towards a global, ambitious, effective and comprehensive international agreement .

In the meanwhile, CO₂ emissions are continuously registering new records, year after year (30.6 billion of tons in 2010⁶, 31.6 in 2011⁷) such as its concentration in the atmosphere, today close to the symbolic threshold of 400 ppm. The discussion about the Arctic Pole is now more oriented to who has the right and how to use its more easily achievable natural resources⁸, rather than if the ice surface reduction should worry the planet. In the media, the extreme weather events are nowadays becoming almost a normal and accepted condition.

In this framework, there is no doubt that an international agreement is fundamental but not enough to solve climate change⁹.

The market is already moving

It is not possible to apply an effective solution to climate change without a deep and extensive involvement of people in their double role of citizens and consumers. The first kind of involvement is necessary to create the fundamental bottom-up pressure needed to foster any government towards an ambitious global deal.

Consumers are equally important to facilitate the drastic change in the market dynamics in order to realize the revolution expected in the next years.

Something has already started to change in the last decade. The Emission Trading Scheme (ETS) operating from 2005 in the EU, together with the Clean Development Mechanism (CDM) and the Joint Implementation (JI) under the UNFCCC umbrella, introduced the CO₂ as a new economic value¹⁰. At the beginning of May, with almost unanimity, an ETS was approved also in South Korea¹¹: in this way the country exceeded the tactical moment existing in Asia, where Japan and China are slowly moving forward on this topics, but avoiding to do the first step in order to control what has been done by the respective big economical competitors. The voluntary movement of China in this area is however interesting, taking into account that it is not part of the group of countries formally committed under the Kyoto Protocol (KP) with greenhouse gas (GHG) targets reduction. In fact, a pilot ETS should be implemented in six provinces of China by 2013 as well as at the national level by 2015¹². According to Bryony Worthington and Terry Townshend,¹³ the reasons why China is moving towards ETS are threefold: to maintain social cohesion through a sustainable growth; since command and control policies applied to date do not stimulate innovation nor encourage enterprises; and, finally, because after the 2011 Durban Conference, China knows that it is expected to take part in an international agreement to cut global emissions from 2020.

In Australia the situation is more complicated:¹⁴ the attempt to introduce ETS was one of the main reasons which pushed Kevin Rudd to resign in favour of the par-

ty's colleague Julia Gillard. She moved straight towards the ETS, despite the strong opposition of the important national lobby of the coal industry¹⁵. The aim is to introduce ETS after 3 or 5 years from the launch of the carbon tax¹⁶. The law has been approved in November 2011¹⁷ and a new tax will be on place from July 2012 with a value of A\$23 (almost €19) per ton of CO₂. An ETS is already on place in New Zealand too, from July 2010¹⁸. The carbon tax has also been discussed for quite a long time in the EU. France renounced to its carbon tax when the project was already announced¹⁹ because the government was worried that competitiveness might possibly sink²⁰. Ireland introduced a carbon tax of 4c a litre in 2010²¹. Italy is ready to introduce a carbon tax of a not yet defined value, included between 4c and 24 c²².

For many countries (i.e., Norway, Australia, New Zealand) the availability to commit for more ambitious targets in the UNFCCC context is subject to the availability of a market-based mechanism²³.

The Norwegian climate policy is based on the principle to put a price on emissions, through economy-wide measures. From 2013, about 80% of emissions in Norway will be covered by economic instruments (CO₂ taxes or emissions trading).

The same applies to the Switzerland, which approved a legislation in December 2011, for the 2013-2020 period, setting several instruments, such as a CO₂ levy on fuels used for energy and an ETS for large industries. A new market-based mechanism has been agreed in the UNFCCC context, although modalities and procedures are yet to be elaborated and a decision is expected by the end of 2012.

The existing and evolving ETS and carbon tax at the international level are confirming the prospect of a growing and extensive CO₂ price, which gives extra value to the investments in energy efficiency and facilitates the introduction of low carbon technologies and solutions.

The actual development of the Carbon Footprint of Products

A further and powerful market mechanism is growing very fast with regard to products at the international

level, acting on the important producer-consumer relationship.

The crucial importance of the Carbon Footprint of products (CFP) is found in the capacity to condense in a single number the GHG emissions arising from the entire life cycle of a product. Through this tool the producers may have a double set of advantages: internally, they achieve a detailed description of the amount of GHG emitted in the product life cycle, mainly linked to its energy content, besides knowing in which phases this happens. The "external" advantages are probably even more attractive, based on the possibility to use the CFP as the preferred way to communicate the product's climate characteristics to clients.

This is exactly what consumers are increasingly looking for at the international level, with the awareness that their purchase choices have a central role in the market dynamics in order to address the transition to a low-carbon economy. The idea that, in the near future, there will be a great spread out of information about the CFP, also has a strong potential to increase the consumers' awareness related to choices and behaviours in daily life.

In June 2012 more than 27.000 products have obtained the CFP Carbon Trust certification in 21 countries²⁵. Different national schemes for CFP have been created in several countries, such as UK, Japan, Sweden, Korea and Thailand, and it is expected that several more will be developed in the next few years.

Also in Italy the situation on this topic is changing very quickly and the Minister of the Environment, Mr. Corrado Clini, is showing particular attention to the CFP as may be understood by the creation of a pilot project involving 22 different products of large use (Table 1). It is not excluded that the forthcoming months may lead to the creation of a National scheme of CFP.

All these examples of strong attention already achieved in so many countries may be explained only taking into account the combination of opportunities for producers and consumers and the consequent possibility to create new market dynamics among these actors. Nevertheless, a single international standard reference is still missing.

Organization	Product
Caseificio Amiata	Portion of seasoned cheese Pecorino Toscano DOP
Suncover	Special roller blinds
Bauxt Blindate	Reinforced door “Plank” of Bauxt
San Benedetto	Bottled mineral water and soft drink
Lete SpA	Mineral waters Lete and Sorgesana
COOP Italia	Several groceries and bulk goods
Latteria Montello	Cheese dairy products
Distretto Latte Lombardo	Milk
Cantine San Marco Srl	Products of winery San Marco
CISPA	Bottling and distribution of beer
Rolli Alimentari SpA	Production of frozen groceries
Eridania	Sugar
Azienda Agraria Seggiano di Paolo Fantozzi	Truffle sauce and balsamic vinegar
Granarolo	Products of Granarolo brand
Agricola Castello Monte Vibiano Vecchio	Olive oil
Grafiche Bovini	Comic book
Sorrento Sapori e Tradizioni	Pizza
Ar Alimentare SpA	Frozen bakery product distributed by AR
Gruppo Millepiani	Elevator “Planet”
Ecor NaturaSi SpA	Groceries of NaturaSi
Al.TRAI	Dairy products
Graficart	Art book
Distretto del Mobile Livenza	Three types of wooden furniture
Emilceramica	Ceramic tiles

TABLE 1 Different products of large use involved in the Italian pilot project

An international standard by summer 2013

The first reference document on CFP has been the PAS 2050, published in 2008 by BSI, the British Standardization Institute. Technically speaking this is not a standard but a Public Available Specification. The difference between the two levels of documents is mainly related to the involvement of stakeholders in the development process and the time needed to complete and publish them. Both kinds of documents may introduce specifications and requirements and, probably for this reason, now everyone calls the PAS 2050 a CFP “standard”.

The choice to develop a PAS has been related to the

awareness of an already existing market request for this kind of tool. Therefore, the “time” factor has been considered crucial for the success of the project and, as a matter of fact, the PAS 2050 has been produced only in one year. Carbon Trust – a private company created in 2001 by the UK government to foster low-carbon technologies and solutions – and DEFRA – the UK Environmental Agency – promoted the document. The revision published in 2011 has been sponsored by different actors, all part of the UK national departments: DECC (Department for Environment and Climate Change) and BIS (Department for Business, Innovation and Skills), together with DEFRA²⁶. This is a

Approval	Disapproval
Australia	Argentina
Austria	Armenia
Bangladesh	Bahrain
Brazil	Canada
Costa Rica	China
Cuba	Colombia
Finland	Ecuador
France	Egypt
Indonesia	Germany
Israel	Ghana
Italy	India
Japan	Mexico
Jordan	Pakistan
Kenya	Russian Federation
Korea	Singapore
Lebanon	Spain
Malaysia	Trinidad and Tobago
Mauritius	Vietnam
Netherlands	
New Zealand	
Norway	
Portugal	
Senegal	
South Africa	
Sweden	
Switzerland	
Thailand	
Tunisia	
Turkey	
United Kingdom	
USA	
Zimbabwe	

TABLE 2 Ballot result on ISO/DIS 14067

clear evidence of the UK Government's attention to the market opportunity for the CFP. Also in 2011 the PAS 2050 revision has been published and another CFP reference document has been issued

by WRI (World Resources Institute) and WBCSD (World Business Council for Sustainable Development). The publishing of both documents has been delayed with regard to the original time schedule due to the focus that the two processes reserved to the ongoing decision on ISO 14067. The high level of attention to this standard is justified by the awareness that this will become the main standard reference, once published. However, the development path towards the ISO standard is not so easy. In the past there have been more stops to its mandatory development steps (WD, CD, DIS and FDIS), documented by the three revisions of the Working Draft and the three revisions of the Committee Draft. Nowadays, the balloting to move from DIS to FDIS failed with a 33% of negative vote against the maximum accepted threshold of 25% (Table 2)²⁷ forcing to a second DIS 2 stage.

A tool facilitating low-carbon economy rather than building up trade barriers

Why such an important and expected standard is finding all these difficulties in its development, being forced to repeat time after time the same development steps (WD and CD) and then failing the ballot from DIS to FDIS? Probably there exist some internal causes in ISO because this process has not always been managed in an effective way. However, the main reasons are related to the number and importance of different interests, rather than lobbies, acting around this topic. It is normal to expect that any powerful tool may generate big opportunities as well as big risks. There is no doubt that ISO 14067 will play a very powerful role in the international market and the level of pressure influencing the Standard's text and its requirements becomes evident.

There are, for example, different expectations on ISO 14067 among fossil and palm oil companies, concrete and wood industries, or the view of the consumers and the industrial associations. Yet, probably one of the most crucial factors that will decide the future success of the Standard is its potential role in the market relation between developed and developing countries. For a deeper understanding of this area of interest it might be useful to describe a couple of examples.



The first one is already 5 year old. In 2007 Tesco, the big UK retail company, decided to evaluate the CFP of a set of products. Among them, there were flowers produced in Kenya. The most important contribution of the CFP on these flowers was connected with the aircraft transportation. For this reason, Tesco decided to halve the amount of flowers supplied by Kenya. A broad discussion followed these decisions in the UK, due to another kind of considerations, such as the role of agriculture for a sustainable development path in Kenya²⁸ or technical considerations about the environmental impact evaluation during the cold season, when the flowers coming from the Netherlands have a CFP 5 times as bigger as the African one²⁹, due to the additional energy input for their cultivation in greenhouses.

Anyhow, the Kenya Flower Council called for a risk of creation of trade barriers³⁰.

Probably this situation forced the developing countries to ask and obtain the introduction of the requirement to report separately the aircraft emissions in the current version of the ISO 14067, despite the complete absence of technical reasons to treat this emission differently than the ones arising from sail and road transportation.

The other crucial example happened before the Oslo meeting in June 2011, when a decision had to be taken on the possible upgrade of the ISO 14067 CD2 to the DIS level.

In the official balloting before the meeting, Egypt voted to move the document from CD to DIS. After that,

Country	Comments
Pakistan	This again brains back the prospects of using ISO standard on CFP, namely ISO 14067 as a trade barrier
Russia	The standard can be used for differentiation of the goods and services on the base of their carbon footprint with further application of non-tariff barriers to an import of “ecologically dirty” goods (services), and also for application of the differentiated rates of import duties on the goods ... For the Russian export the negative influence would affect the decrease in competitive ability of power- intensive goods...
Trinidad and Tobago	Due to the fact that Trinidad and Tobago is a two-island state, all of our product exports have to be shipped to receiving consumer countries either via sea or air. The current standard has included transportation processes as part of the CFP process. This could penalise countries that are relatively distant from their main markets and that depend on international transport for the export of their products and services. This effectively places developing countries at a disadvantage when exporting and will skew the CFP in favour of those countries with a shorter transportation route
Bahrein	The draft with its current content will cause negative economic impact on Kingdom of Bahrain’s main exports.
Mexico	We should consider WTO principles very carefully so as to avoid technical barriers to trade.
Armenia	SARM (Armenian Standardization Body) has discussed the ISO/DIS 14067 with BIS (Indian Standardization body) and fully supports and agree to the comments presented below.
China	Propose to change from the requirement standard into a guidance document
Vietnam	The publication of this international standard would be contrary to the international regime under the UNFCCC, which lays down differentiated responsibilities for developed and developing countries...
Pakistan	...standards would be published as a requirement standard which would than be used as a tool for imposition of non tariff barriers (NTBs) by members who incorporate this standard in their technical regulation by differentiating products on the basis of their carbon footprint
Colombia	The scope of this standard shall be stated that this document shall be not certifiable and that it specifies principles and guidelines for studies to quantify and communicate CFP, hence the Colombian committee suggests to develop this document as a Guideline or PAS

TABLE 3 Examples of some comments received on ISO/DIS 14067 and discussed at the Bangkok meeting in June 2012, dealing with the trade barrier problem. Bold fonts are introduced by the author

the India Foreign Minister wrote a letter to the Egyptian Foreign Minister to claim for the positive vote of the Mediterranean country. It is really unusual, almost surely the first time in the environmental sector, that such a high level politician takes part directly in an ISO technical process.

As a consequence, Egypt expressed a negative vote in the following ballot in June 2012 (to decide if moving the DIS to FDIS), although it is possible that additional causes contributed to this change of position. Informal confirmation of a broader lobby activity from India pushed other countries to decide for a negative vote. For example, Armenia expressed, with its negative vote, full support to the Indian position³¹ and, on the “secondary data” item, India and other three countries expressed exactly the same comment. The large majority of negative votes from other countries were justified by the concern that ISO 14067 would have created a new kind of trade barrier (Table 3).

To give an answer to this concern, in the same month, at the Bangkok meeting, a specific clause was been proposed (4. Application) in the ISO/DIS2 14067, improving the previous Oslo’s version³² and specifying that the standard *shall not be adopted or applied in a manner that results in barriers to trade that contradict WTO requirements*, aiming at solving the developing countries’ opposition.

Carbon will play an important role in future markets

The CFP is, therefore, just in the middle between the risk to facilitate the creation of an unattended trade barrier and the strong need to use the market potentiality to build up the needed pressure from the bottom, in order to complement (or substitute, in the worst case) the necessary international top-down new political deals.

As a matter of fact, bottom-up and top-down approaches have a complementary role and the hurdle of politically achieving an international deal may force some countries to ask for the introduction of different kinds of market tools. In this respect, the choice of Mr. A. Montebourg, the France Minister of Industrial Renewal, to introduce a carbon tax on goods imported

from outside Europe should be understood³³. This was thought in order to balance the European situation with other developed countries, whereas the absence of any commitment on GHG reduction may generate a different structure of costs for goods’ production hence creating a clear market distortion.

The possibility to create trade barriers is therefore deeply connected with the existence of strong, comprehensive and effective international agreements.

Within this framework, the possible role of CFP as trade barrier should be considered more connected with external factors and political choices rather than with technical characteristics, such as requirements introduced in an ISO standard.

Global and local food

The CFP may play an important role in the food sector to facilitate the development of local markets as possible alternative of the globalization. This may generate large discussions on the implication of this case in terms of lack of economic opportunities, but it is fundamental to always keep in mind the dimension of the challenge that climate change is asking to face.

This implies that strong changes in consumer behaviours are not more deferrable. Just last year, on the occasion of the ISO meeting in Toronto to develop the ISO 14067, in a restaurant a maitre served me a bottle of water produced less than 100 km from my house in Italy. And this happened in a country that does not have any problem of water availability. How is it possible to imagine 50% of global GHG reduction by 2050 (compared with 1990) without changing this kind of market pattern? This personal experience could be probably replicated for large part of the food sector, where the main contribution of foods and beverages to CFP may be due to their long transportation distances.

In order to reduce the importance of this kind of GHG global emissions and to promote local agriculture, several movements promoting the “0 km products” approach in the food sector were initiated in the last years. In this context, the CFP could play an important role to support with objectivity this evolution that started to be part of the market dynamics before the idea of CFP was launched.

A radical change from the globalization to the localization approaches may seem today unlikely considering the actual market dynamics. Reality is also expected to change radically in the next years to build up an effective answer to the anthropogenic global warming, and it is very likely that what today seems impossible in few years may become simply the reality.

Conclusion

The high level of attention paid to the development of the CFP standard ISO 14067 shows the important role this document will have at the international level when published. Some developing countries are worried that the new standard may create undesired trade barriers but this seems to be related more to the international political negotiation than to the content of a technical standard. The ISO 14067 development process has been largely delayed, as evidence of the large level of existing interests, but it does not seem possible it will fail considering that other CFP standards are already present in the market. The CFP will probably play a key role, particularly in the food sector, where it may objectively support the already existing dynamics in favour of the local agriculture production.



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