Designing an Internal Carbon Fee Program

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# Setting an Internal Carbon Fee at Stonyfield

## Program to Design:
How can Stonyfield incentivize business units to reduce their carbon emissions through an internal carbon pricing program?

## Companies to Benchmark:
- Microsoft
- Disney
- MARS
- PUMA

## Learnings from Stonyfield

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<tr>
<th>Question</th>
<th>Microsoft</th>
<th>MARS</th>
<th>PUMA</th>
<th>Implications</th>
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<tr>
<td>What is the goal of your carbon fee program?</td>
<td>Could include becoming carbon neutral, reducing emissions, or managing long-term risk exposure.</td>
<td>Reduce actual amount of carbon emissions &amp; tie carbon offsets to operational decisions.</td>
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<tr>
<td>What scope of emissions should be included?</td>
<td>Scope 1 and 2 most common, but scope 3 may make sense depending on nature of supply chain.</td>
<td>Scope 1 &amp; 2, plus business air travel (measurable &amp; controllable).</td>
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<tr>
<td>What price do you charge?</td>
<td>Varies according to intended use of fee – integrated vs. informational ($6-7, 10-20, 20-30, 87).</td>
<td>Use parent company’s (Danone) carbon price in foreign markets.</td>
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<tr>
<td>Who gets charged &amp; how is it applied?</td>
<td>Generally charged to business units as part of P&amp;L.</td>
<td>Apply carbon fee to each product line’s P&amp;L.</td>
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<tr>
<td>Who is engaged &amp; does it affect incentives?</td>
<td>Mgmt board, finance &amp; BU’s are usually involved. Incentives reflected in P&amp;L – linked, or special, bonus.</td>
<td>Senior leadership (most likely CFO) takes initiative. Create a cross-functional team to run the program.</td>
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<tr>
<td>How is the carbon fee used &amp; managed?</td>
<td>Managed by finance team or multi-dept. committee. Funds used for CO2 offsets or operation improvement.</td>
<td>Cover carbon offsets and generate funds for internal operational efficiency improvements.</td>
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I. Introduction

As the world becomes increasingly aware of the impact of greenhouse gas emissions on the planet, companies that wish to be responsible corporate citizens and mitigate the risks associated with climate change are increasingly looking for ways to decrease their carbon footprint. For some companies, the motivation comes from the cost savings associated with more efficient operations. For others, concerns about long term risk leads to a desire to reduce reliance on fossil fuels and thereby decrease exposure to volatile commodity markets. Some organizations, like the dairy products company Stonyfield Farm, also want to minimize their carbon emissions because it’s the right thing to do. Regardless of the motivation, reducing carbon emissions requires developing a mechanism to translate intentions into implementation, and to make those changes stick.

Internal carbon fee programs offer one potential mechanism for aligning internal incentives to reduce the company’s carbon emissions. Program designs vary, but at their core these programs place a price on carbon emissions and charge a fee to the part of the business responsible for those emissions, so that decision makers are incentivized to pursue investments or make decisions that reduce emissions.

Outside of countries that mandate a carbon tax, only a handful of organizations have fully developed carbon fee programs, and those programs vary in design significantly. Microsoft has one of the best known carbon fee programs and has published a detailed guide on its approach to developing and implementing an internal price on carbon.\(^1\) The guide provides a useful starting point for anyone interested in implementing a carbon fee that follows the Microsoft model. However, a survey of the few companies that have or are moving towards a carbon fee shows that program designs can vary substantially depending on the goals and organization of each company.

In order to help more companies consider and implement an internal carbon fee, this paper outlines six questions that an organization should answer when designing a carbon fee program. After outlining how four benchmark companies have answered these questions – Microsoft, Disney, Mars and Puma, two of which have carbon fee programs and two of which have other forms of carbon emission reduction programs – the report concludes with a summary of key takeaways and resulting recommendations for Stonyfield Farm.

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II. Background and approach

Stonyfield has long been committed to sustainability. The company’s mission of “healthy food, healthy people, healthy business and a healthy planet” has for many years included a commitment to reduce the company’s carbon footprint,\(^2\) and since 1997 Stonyfield has been offsetting its facility energy use through the purchase of carbon offsets. Stonyfield’s purchasing of carbon offsets is similar to what some term “carbon neutral,\(^3\)” which in the case of companies such as Microsoft and Disney is defined as purchasing carbon offsets equal to the company’s own Scope 1 and 2 greenhouse gas emissions.\(^4\) In the long term, however, actually reducing emissions has a greater positive impact both for the company and for the environment than simply matching emissions with offsets. With this end in mind, Stonyfield is considering an internal carbon fee program in order to integrate its offset spending more fully into its operations and thereby drive emission reductions.

According to the CDP, an organization that works with companies to disclose greenhouse gas emissions, at least 29 companies use some form of internal carbon price in their strategic planning (see Exhibit 1). A relatively small number, however, have fully implemented carbon fee programs. This report focuses on four companies – Microsoft, Disney, Mars and Puma – selected based on the maturity of their carbon fee programs and operational similarity to Stonyfield. Microsoft and Disney have among the most developed carbon fee programs in existence, and offer useful lessons on program design. Mars and Puma, which are more similar to Stonyfield in terms of industry and business model (although larger in size), measure their


\(^3\) There is currently no universal definition or accreditation system governing how organizations use the term “carbon neutral.” In November 2006 the New Oxford American Dictionary selected “carbon neutral” as the Word of the Year of 2006, with the definition “Being carbon neutral involves calculating your total climate-damaging carbon emissions, reducing them where possible, and then balancing your remaining emissions, often by purchasing a carbon offset: paying to plant new trees or investing in “green” technologies such as solar and wind power.” This definition, however, does not define the scope of emissions to be offset or the type or accreditation of acceptable offsets. For the remainder of this paper, the term carbon neutral refers to the practice of purchasing carbon offsets based on criteria that the organization itself defines, in order to offset emissions within a scope that the organization chooses, most likely including Scope 1 and 2 emissions.

\(^4\) Stonyfield’s purchased offsets in fact slightly exceed its Scope 1 and 2 emissions to include some of its Scope 3 emissions. The Greenhouse Gas (GHG) Protocol categorizes emissions as follows: “Direct GHG emissions are emissions from sources that are owned or controlled by the reporting entity. Indirect GHG emissions are emissions that are a consequence of the activities of the reporting entity, but occur at sources owned or controlled by another entity. Scope 1: All direct GHG emissions. Scope 2: Indirect GHG emissions from consumption of purchased electricity, heat or steam. Scope 3: Other indirect emissions, such as the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, electricity-related activities (e.g. T&D losses) not covered in Scope 2, outsourced activities, waste disposal, etc.” Source: “Greenhouse Gas Protocol FAQ,” Greenhouse Gas Protocol, accessed May 12th 2015, http://www.ghgprotocol.org/calculation-tools/faq.
emissions and have calculated their total exposure if a carbon fee were put in place, but they use this number for informational purposes only. However, these companies have other initiatives in place to drive reductions in carbon emissions.

<table>
<thead>
<tr>
<th>Criteria for selecting external benchmarking targets</th>
<th>Microsoft</th>
<th>Disney</th>
<th>Mars</th>
<th>Puma</th>
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<tbody>
<tr>
<td>Best-in-class carbon fee programs</td>
<td>✓</td>
<td>✓</td>
<td></td>
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<tr>
<td>Business type or size similar to Stonyfield</td>
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<tr>
<td>Availability of information</td>
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III. The six questions a carbon fee program needs to answer

The carbon fee programs we studied differed on six key dimensions. These six dimensions are interlinked, and successful programs design answers to each of these questions in the context of their individual organizational structures before implementation.

1. **What are the goals of your carbon fee program?** Goals can include becoming “carbon neutral,” achieving a percentage reduction in emissions, or preparing the organization for a future carbon tax.

2. **What scope of emissions should be included?** Most organizations use the Greenhouse Gas Protocol to define scope (see Exhibit 2), but the scopes included differ between each organization. Questions to consider include: Should the fee cover only direct emissions, or also include indirect emissions through electricity use, business travel, or other indirect emissions further up or down the supply chain?

3. **What price do you charge?** The price placed on a ton of carbon emitted range from lows of $6 or $7 to as high as $80 or more, and depend on the objectives and design of the program. Programs that involve an actual transfer of money tend to charge lower fees, while programs that use the fee as an informational input into investment decisions typically use higher prices.

4. **Who gets charged and how is the fee applied?** To influence behavior, the fee needs to matter to the decision-makers at the right levels in the organization. Who in the organization has the biggest impact on carbon emissions, and at what stage does evaluation of cost play into her or his decisions?

5. **Who is engaged and how does the fee influence incentives?** Any cross-functional initiative requires organizational buy-in, and a program designed to align incentives to encourage reduction in carbon emissions needs to tie into existing incentive structures in a way that makes sense for the organization.

6. **How is the carbon fee fund used and managed?** The money that is generated through the internal carbon price can be used in a variety of ways, from purchasing carbon offsets to reinvesting in capital projects for further carbon reductions.
In June 2012, Microsoft announced its commitment to achieve net zero emissions by FY 2013. Microsoft’s strategy to reduce its environmental footprint and achieve carbon neutrality encompasses three strategic pillars: be lean, be green, and be accountable.

Under “be lean,” Microsoft focuses on driving energy efficiencies in their data centers, software development labs and offices, as well as reducing air travel by increasing the use of online collaboration technology. Under “be green,” the company is investing in renewable energy and offset projects to achieve carbon neutrality. It is under the category of “be accountable” that Microsoft has set a price on carbon to internalize the external impact of the company’s operations.

In December 2013, after achieving net zero emissions, Microsoft released a “Carbon Fee Playbook,” which outlines an overview of their approach to create and implement an internal carbon fee (see Exhibit 3). In its FY 2014 Sustainability Report, Microsoft disclosed its GHG emissions as 9 million tons. Approximately 15% comes from Scope 1 and Scope 2 and the remaining 15% is from Scope 3. In addition to Scope 1 and Scope 2 emissions, emissions from business air travel, which comprises 3% of the total emissions, are the target of net zero emissions.

**Goals.** Microsoft seeks to achieve zero net direct GHG emissions. Microsoft believes that becoming carbon neutral and implementing a carbon fee will be good for both the environment and their business by making operations more efficient.

**Scope.** Microsoft has committed to become net carbon neutral in its data centers, software development labs, offices and employee air travel. The carbon fee program covers Scope 1, Scope 2 and emissions from air travel.

**Price.** Microsoft sets a price on carbon by dividing the cost of their offsets by their total carbon emissions. It is reported that the resulting carbon price for FY2013 is $6-7 per ton of CO2.

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**Charging.** The carbon fee is charged quarterly to business units, each with their own P&L, based on their actual GHG emissions. The fee that is collected is transferred internally to the Carbon Neutral Fee fund, which is used to purchase carbon offsets and achieve carbon neutrality.

**Stakeholders & Incentives.** All of Microsoft’s business units were involved in designing the carbon fee program in order to maximize long-term organizational commitment. A cross-departmental Carbon Neutral Council is responsible for providing support to reduce GHG emissions and deciding how to use the fund. The council has a task force that meets monthly to track progress, celebrate wins, and brainstorm solutions for identified challenges.

**Use of Funds.** In order to offset the GHG emissions from operations, Microsoft uses the funds collected through the carbon fee program to fund internal initiatives, green power purchases and carbon offset purchases. The Carbon Neutral Council oversees all carbon offset purchases and partner relationships.
The Walt Disney Company is a mass media and entertainment conglomerate with businesses that range from theme parks and cruise ships to film studios and television channels. With its wholesome image and family focus, Disney believes that its “concern for kids and families must extend beyond their entertainment to the world in which they live.” However, some of the company’s operations, in particular those related to cruise ships and theme parks, are also resource-intensive and contribute significantly to greenhouse gas emissions. Disney created its own internal carbon fee program, the Climate Solutions Fund, to reduce and offset the harm that the company’s operations have on the environment and to ensure that its operational practices are aligned with its brand.

Disney has increased the rate at which it purchases carbon credits over the past three years to reduce its net carbon emissions. In 2014, the company had combined direct and indirect emissions of 1.63 million metric tons CO2eq, and retired 531,970 metric tons worth of carbon credits, resulting in net carbon emissions of 1.1 million metric tons. As of 2014, net emissions decreased by 31% relative to 2012 levels, although Disney’s direct and indirect emissions increased slightly over the same period (1.6 million metric tons in 2012, 1.68 million in 2013, and 1.63 million in 2014), with the decrease in net emissions driven by a higher number of retired carbon credits.

**Goals.** The goals of Disney’s program are twofold: to reduce net emissions in the short term (with a goal of 50% reduction from 2012 total levels by 2020), and in the long term to become fully carbon neutral, defined as purchasing certified carbon offsets for its Scope 1 and Scope 2 emissions. The company aims to achieve carbon neutral status through the following hierarchy: avoiding emissions, reducing emissions through efficiency, replacing high-carbon fuels with low-carbon alternatives, and then using high-quality offsets for remaining emissions.

**Scope.** Disney’s program includes Scope 1 emissions (direct emissions, for example generated to power its cruise ships and theme park rides), and Scope 2 emissions (indirect emissions from purchased electricity). Emissions are included for all owned and operating assets, which

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10 The boundary for Disney’s GHG target includes owned and operated assets (commercial spaces, Parks and Resorts, broadcast stations, and Disney Cruise Line). GHG emissions from Productions (including TV, cable, movies, ESPN, and Theatricals), Disney Stores, and leased assets are excluded from the target.
12 Ibid.
includes commercial spaces, Parks and Resorts, broadcast stations, and Disney Cruise Line. Emissions from Productions (including TV, cable, movies, ESPN, and Theatricals), Disney Stores, and leased assets are not included.²⁴

**Price.** Although Disney does not publish its precise carbon price, the price is reported to be in the $10-20 range.²⁵ The target price is determined internally, and a portfolio of offsets is then purchased that includes some higher-priced and some lower-priced offsets, which results in an average portfolio price that equals the target price.

**Charging.** Disney’s carbon fee is applied at the business unit level, which for Disney means for example an individual cruise ship or a theme park. Disney first determines the volume of offsets needed to meet its emissions target²⁶ (which in 2014 meant buying offsets for a third of its Scope 1 and 2 emissions, and will eventually mean buying offsets for all of its emissions²⁷) and sets a target price per offset. After purchasing offsets, the total cost is distributed to the business units in proportion to their carbon emissions. The fee is incorporated into capital investment decisions, meaning that investments that decrease carbon emissions result in higher long-term returns. Within each business unit, that business’s finance team determines its own approach for distributing accountability for the carbon fee.²⁸

**Stakeholders & Incentives.** Since Disney’s carbon fee is a tool that operates primarily through the mechanism of financial accounting, engagement with Disney’s finance function was central to developing the program. The sustainability team worked closely both with the corporate finance team and with the finance teams in each of the business units to develop a program design that worked for the organization. The primary way in which the fee incentivizes behavior is through its place on each business unit’s financial statements and its inclusion in profitability calculations for new investments.

**Use of Funds.** Disney uses the funds it generates through the carbon program exclusively to buy carbon offsets. The offsets purchased include a mix of higher-priced offsets purchased from NGOs, primarily NGOs working with reforestation projects, an area closely aligned with Disney’s mission. Some lower-cost offsets are also purchased to achieve the target average price for the portfolio. Certificates for retired offsets can be viewed on Disney’s webpage,²⁹ and include

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²⁸ Interview with member of Disney sustainability team, April 6th, 2015.
landfill gas capture, dairy farm methane capture, wastewater treatment methane capture, renewable energy from wind turbines, renewable biomass, nitrous oxide abatement, avoided conversion, and avoided deforestation.\textsuperscript{20}

The company made a conscious decision not to reinvest the funds generated internally into efficiency or carbon reduction projects, in order to avoid the extra administrative cost that an internal fund would entail and to avoid “double-incentivizing” projects that if pursued should already have a net positive NPV based on the carbon reduction they generate.\textsuperscript{21} By using the carbon fee to incorporate the cost of carbon into financial planning decisions, Disney is able to use the carbon fee as a clear and consistent signal to its wide range of businesses of the extent to which carbon emission reductions should be prioritized when emission reductions involve cost trade-offs.


\textsuperscript{21} Interview with member of Disney sustainability team, April 6th, 2015.
With $33 billion in revenue in 2014, Mars Inc. is one of the world’s largest manufacturers of consumer packaged goods. The company has six business segments: Petcare, Chocolate, Wrigley, Food, Drinks, and Symbioscience. Its brands include many household names, such as M&Ms, Dove chocolate and Pedigree pet foods. Similar to Stonyfield, Mars is heavily dependent on agricultural products which are vulnerable to climate change.

In its latest sustainability disclosure, Mars reported 13.8 million tons of aggregate GHG emissions across its entire supply chain (see Exhibit 4). The company does not currently feel that a carbon fee is needed as a tool to reduce its Scope 1 and 2 emissions, although it is considering a carbon fee as a potential tool for reducing Scope 3 emissions.

**Goals.** Mars aims to reduce GHG emission along its supply chain. In the long term, Mars plans to reduce its Scope 1 and Scope 2 GHG emissions by 100% from its 2007 baseline by 2025. The company is on track to achieve its interim goal of a 25% reduction by 2015.

**Scope.** Mars only sets specific reduction goals for Scope 1 and Scope 2 emissions, which are under the company’s full control. Mars has not set specific goals for Scope 3 emission (which represent 86% of all estimated emissions), but it is working with external partners to reduce GHG emissions along its product life cycle. Mars monitors business travels and commuting emissions in Scope 3, but these emissions have not been prioritized because they are seen as too small to be considered as strategic priorities.

**Price.** Mars has not implemented a carbon fee program and has not adopted a specific carbon price. However, in a 2014 response to a survey from the CDP, Mars used a carbon price of $20-30 per ton in order to calculate its risk exposure to any future government regulations on fossil fuel usage, regulations on GHG emissions, and energy price fluctuation.

**Stakeholders & Incentives.** Mars has allocated dedicated team members to work on GHG emission reduction and has created various incentive plans to engage employees throughout the organization.

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23 Private email correspondence with member of Mars Sustainability team, April 2015.
At the company level, Mars’ sustainability team works on global or large-scale initiatives. Mars has a full-time sustainability coordinator, and each of Mars’ business units are required to have at least one dedicated full-time staff member to work on energy efficiency improvements and emissions reduction.

Sustainability goals are also built into compensation packages. Bonuses for top executives, including the CEO and CFO, are based in part on Scope 1 & 2 emissions reduction targets.27 For lower-level management and employees, Mars runs on-site workshops to convey company sustainability goals and programs. Employees who contribute greatly to sustainability efforts are recognized with “Make a Difference” awards. Mars also has created an ambassador program to enable its employees to work one to six months in partner organizations in order to better understand supplier challenges, many of which are related to sustainability.28

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PUMA is one of the world’s leading sports brands – designing, marketing and selling footwear, apparel and accessories. Based in Herzogenaurach, Germany, PUMA is listed on the Frankfurt and Munich stock exchanges and has approximately 14% of its shares in free float. In fiscal year 2014, the company had $3,324 million in sales in 120 countries and employed 10,000 people worldwide. Footwear, apparel and accessories made up 43.2%, 37.1% and 19.7% of its sales respectively.²⁹

PUMA has measured the environmental impact from its own operations, as well as key suppliers, since 2005. In 2011, PUMA was the first company ever to establish an Environmental Profit and Loss Account (EP&L). The EP&L is an attempt to measure the value of the water, biomaterial, and land use required of the company’s raw materials through the point of sale, and the cost of the resulting environmental impact, including carbon emissions.³⁰

However, the EP&L and its associated carbon price does not have a direct financial impact on PUMA’s business units. Since 2011 PUMA has published an EP&L for selected products, and it is currently working with its French parent company Kering, which is looking to establish a group-wide EP&L by 2016.

**Goals.** PUMA aims to reduce CO2 emissions, energy, waste and water in its offices, stores, warehouses and direct supplier factories by 25% by 2015 relative to a 2011 baseline.³¹

**Scope.** In its EP&L, PUMA includes all Scope 1 and Scope 2 emissions, in addition to all direct suppliers, which it describes as its Tier 1 suppliers for shoes, apparel and accessory manufacturing. These operations account for 15% of PUMA’s total supply chain emissions.

**Price and Charging.** PUMA has set the price of carbon at $87 per ton, based on the “social cost of carbon” as reported by Richard Tol in his 2009 paper, “The Economic Effects of Climate Change.” The value includes damage resulting from current and future climate change, such as reduced crop yields, damage to infrastructure, and increased incidences of extreme weather.³²

However, none of PUMA’s business units are charged for their carbon emissions. Instead, PUMA uses its carbon price as a strategic tool: to help direct their sustainability initiatives; a risk management tool: to identify potential threats to its supply chain; and a transparency tool: to provide greater insight to their stakeholders.

**Stakeholders & Incentives.** PUMA has distributed its sustainability functions across the organization, including the creation of a network of “sustainability ambassadors” within each business unit who report to the Board’s sustainability committee.

In addition, a portion of management’s annual bonus is related to the PUMA’s goal to reduce energy, water, waste and carbon emissions by 5%.
IV. Key takeaways from benchmarking

**Integrated Design.** A company must consider each of the six proposed questions in concert with one another in order to create an integrated carbon reduction strategy. If a company wants the program to primarily influence long-term capital expenditure decisions, a lower price that can immediately begin to impact each business unit’s financial statements and is integrated into all financial planning might be most effective. To accelerate emissions reduction through operational improvements, charging a fee that directs funds into internal improvement projects may be more appropriate, and a wider range of stakeholders would then need to be engaged to design and manage the fund.

**Focus of Goals.** Successful carbon fee programs have very specific goals, such as a specified percentage reduction in carbon emissions. Programs such as those at Microsoft and Disney aim to influence investment decisions made by senior management, but do not necessarily translate into awareness among frontline employees of how their day-to-day decisions impact the company’s carbon emissions. To design a successful carbon fee program, the organization should consider which goals a carbon fee is best suited to achieve, and if there are other important related goals, how the carbon fee can be paired with other initiatives to have the desired impact.

**Incentivize the Right Person.** In many companies, a relatively small number of decision makers have an especially large influence on the decisions most likely to impact total carbon emissions. A carbon fee works through the same mechanisms as cost accountability – someone who already considers costs in her or his decision making will be influenced more strongly by a carbon fee than someone who is not held accountable for the cost implications of her or his decision. If there are important decision makers in the organization who do not routinely consider costs when making decisions that also impact carbon emissions, an extra step will be needed to ensure that the carbon fee does in fact influence the incentives for or against a specific decision.

**Involvement and Commitment of Senior Management.** Each of the companies we looked at cited having a champion among senior management as an important success factor. Ideally either the CEO or CFO should lead the initiative.

**Early Engagement of Business Units or Product Lines.** Working with the business units are product lines that will pay the carbon fee not only helps build buy-in, it also helps ensure that the program is designed in a way that is feasible and effective for the organization.

**Information Transparency.** Communication is essential for building awareness and creating support among employees. Transparency of information can help create healthy competition between product lines, and transparency is especially important if funds will be reinvested in efficiency projects, which can give rise to questions on how the funds are distributed.
V. Recommendations for Stonyfield

1. Goals. Stonyfield already offsets its facility energy use through the purchase of carbon offsets. A carbon fee program would seek to increase the connection between employees’ decisions throughout the organization and the organization’s carbon footprint, with the aim of driving continued reductions in carbon emissions.

Given this context, a carbon fee program at Stonyfield could aim to achieve three goals:

1. **Reduce.** Reduce Stonyfield’s carbon emissions

2. **Operationalize.** Tie carbon offsets to operational decisions

3. **Incentivize.** Incentivize employees to incorporate carbon emission considerations into day-to-day decision making

2. Scope. Given the goal of integrating reduction of carbon emissions into operational decisions, Stonyfield should include emissions that are **measurable** with a reasonable degree of confidence and that are **controllable.** In practice this means including Scope 1 and Scope 2 emissions, as well as Scope 3 activities that are measurable and controllable. This might include business travel, product transportation, and possibly even sourcing of material (e.g. milk and packaging materials) if enough information is available about emissions upstream in the supply chain.

3. Price. We see three logical prices for a carbon fee at Stonyfield. Although each of these could be appropriate, we believe the mid-level prices meets the goals outlined above most effectively.

   **Low:** Current price paid for offsets ($5-10), based on an offset portfolio containing a mix of lower- and higher-priced offsets, with higher-priced offsets selected to align with Stonyfield’s mission.

   **Mid (recommended):** Price set a few dollars per ton above the current average offset price, which would generate enough funds both for offsets and to re-invest in further operational improvements. A possible price following this strategy is to use the carbon price of approximately $12 that Stonyfield’s parent company Danone uses in other markets.

   **High:** An even more ambitious program could set the price to the level of an anticipated future carbon tax or to an estimate of the social cost of carbon. In the short term, this

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33 The social cost of carbon refers to the total economic damage caused by a ton of carbon dioxide emissions. The US government currently uses a price of $37 per ton to guide policy decisions, while a recent study from Stanford estimates the social cost of carbon to be as high as $220 per ton. A UK study published in 2006 estimated a cost of $86, which at US inflation rates would today equal $100 per ton of
would generate enough money both to fund the existing offset purchases and to re-invest aggressively in operational improvements. In the long-term, Stonyfield could serve as a proof point that a company can operate profitably under a carbon tax, and as a business the company would be set up to thrive even in an uncertain regulatory environment.

4. Charging. A challenge with implementing a carbon fee at Stonyfield is that because of the company’s small size, directly emulating a Microsoft or Disney-style program would involve simply adding the fee to the overall company’s financial statements, and this would in effect be a very marginal change from what Stonyfield does already and would fail to meet the goal of “operationalizing” the carbon fee. Instead, the carbon fee needs to be applied to the profit and loss statements of the decision makers within the organization who can use the fee as an input into operational decisions. Based on conversations with the Stonyfield team, we believe the right unit of analysis for the carbon fee is the product line, which means the fee should be applied to each product line’s P&L.

The challenge of building a carbon fee into day-to-day decision making is linked to the challenge of encouraging employees to think about costs in general in their day-to-day decision making. For people in the organization who already think about costs – for example a manager responsible for the team’s budget – adding a carbon fee to that cost calculation can be an effective way to influence decision-making. For someone whose role and incentives currently does not involve top-of-mind awareness of costs, other tools would be needed to make the carbon fee effective. Here, best practices from companies like Mars that do not have a carbon fee but find other ways to drive emissions reductions can be useful. For example, annual team awards for the greatest percentage reduction in carbon fee paid relative to a baseline could spread awareness of the carbon fee beyond the top level of management.

An example of the type of decision that would be influenced by a carbon fee program that is integrated into the organization is packaging design. When designing a new packaging format, the person in charge of the new design presumably considers both customer appeal and the cost of the packaging. Adding a carbon fee would mean that when looking at the cost, carbon emissions associated with the packaging format would also be incorporated into the decision. A format that takes up more space in the truck and requires more shipments for the same volume may look less attractive because of the increased carbon emissions and therefore increased costs from the carbon fee associated with this type of design. Applying a carbon fee might therefore lead to changes in design that result in a lower level of carbon emissions.

5. Stakeholders & Incentives. The Microsoft model provides a good example of the process that Stonyfield could follow to build support and to align the fee with incentives. In this model, a member of the senior leadership team, most likely the CFO or someone in a senior operational

role who is responsible for a significant portion of the company’s emissions, acts as the champion for the initiative. A cross-functional team designs and then runs the program, and assuming the price is set high enough to generate funds for internal efficiency investments, this team also decides how to allocate the funds across projects. In the interests of transparency, the carbon fee charged to each product line is posted publicly, creating some healthy peer pressure to make emissions reductions.

Once implemented, the carbon fee would influence behavior by internalizing the price of carbon into the product line’s profitability analysis and forecast. Indirectly, this would presumably influence performance bonuses, which already include a portion based on “healthy business,” although the personal bonus would not be the primary way in which the fee has an effect.

In addition, initiatives to build excitement about carbon fee reduction could include annual awards to reward the teams with the greatest reduction in carbon emissions, internal training, and ambassador programs for employees to work with partner organizations in order to learn and bring back best practices.

In the long term, and ideal scenario would see Stonyfield’s carbon fee program spreading to other parts of the wider Danone organization. For this to happen, ideally the CEO of Danone should be involved in the program design early on, and the roll-out at Stonyfield would be treated as a pilot. Stonyfield could work with the sustainability team at Danone to design a strategy for this to happen.

6. Use of Funds. Assuming the internal carbon price is set above the current average price of offsets, the fund generated will cover both Stonyfield’s existing purchases of carbon offsets and generate additional funds to be used for further operational efficiency improvements. Stonyfield already has two decades of experience with buying carbon offsets, giving it the expertise to choose offset projects carefully.

The fund for internal investments would be new, and would require some thought into the most appropriate structure. As mentioned above, internal investments would ideally be chosen by a cross-functional team. Improvement activities could be categorized based on potential for profitability improvement and potential for carbon emission reductions. Initially the fund should focus on projects that rank highly on both dimensions, and once these projects have been completed, investments can move to projects that have high potential for carbon emission reductions but more modest profitability improvements.

As Stonyfield becomes increasingly efficient and its direct emissions fall, the amount of money paid into the fund would also decline if the portfolio of offsets remains fixed. For the carbon fee to work as an incentive for operational improvement investments, it does need to be possible for business units to save money overall by reducing emissions, which implies a decrease in the fund. Over time, however, the average price of the offsets purchased could be adjusted upwards so that Stonyfield is able to continue to buy offsets from high-value partners that have
a larger positive impact on the environment, and can reduce the proportion of its lower-cost offsets.

IV. Conclusion

The framework outlined in this paper is intended to serve as a starting point for any organization looking to design an internal carbon fee program as a tool to reduce carbon emissions. For a carbon fee program to be successful, each of the six dimensions reviewed in this paper need to be designed as an integrated whole that is aligned with the organization’s overall goals for the program. Given that Stonyfield already purchases offsets to match its facility energy use, the company has an opportunity to be a leader in driving down carbon emissions as much as is possible within the framework of a healthy company.

To ensure the feasibility of the program design and to build buy-in among internal stakeholders, the sustainability team at Stonyfield should work both with internal stakeholders within Stonyfield and potential program champions in the parent company Danone. If successful, Stonyfield’s carbon fee program can act as a pilot program for an initiative that could ultimately become an integrated part of all of Danone’s operations, a proof point that an initiative like a carbon fee can work in a wide range of organizational contexts.
Exhibit 1: CDP List of Companies Disclosing an Internal Price on Carbon

<table>
<thead>
<tr>
<th>Category</th>
<th>Companies Disclosing Internal Price on Carbon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer Discretion</td>
<td>Delphi Automotive Plc, Walt Disney Company, $10-20 **</td>
</tr>
<tr>
<td>Consumer Staples</td>
<td>ConAgra Foods, Inc., Wal-Mart Stores, Inc.</td>
</tr>
<tr>
<td>Energy</td>
<td>Apache Corporation, BP, $40, ConocoPhillips, $8 – 46, Devon Energy Corporation, $15, Exxon Mobil Corporation, $60, Hess Corporation, Royal Dutch Shell, $40, Total, $34</td>
</tr>
<tr>
<td>Financials</td>
<td>Wells Fargo &amp; Company</td>
</tr>
<tr>
<td>Industrials</td>
<td>Cummins Inc., Delta Air Lines, General Electric Company</td>
</tr>
<tr>
<td>Information Technology</td>
<td>Google Inc., $14, Jabil Circuit, Inc., Microsoft Corporation, $6-7 **</td>
</tr>
<tr>
<td>Materials</td>
<td>E.I. du Pont de Nemours and Company</td>
</tr>
</tbody>
</table>

Exhibit 2: Concept of “Scope” by Greenhouse Gas Protocol

Source: Greenhouse Gas Protocol

Exhibit 3: Overview of Internal Carbon Fee in Microsoft

Source: Microsoft Corporation
Exhibit 4: Mars GHG Emissions, 2013

0.8 million tonnes:
Emissions from direct energy and fuel consumption in Mars’ factories, offices and vehicles.

1 million tonnes:
Emissions from purchased electricity used in Mars’ factories and offices.

12 million tonnes:
Emissions from purchased raw materials, packaging and other goods and services, plus other aspects of our value chain, such as transportation of raw materials and products, business travel, Mars’ products in use and waste generated in our operations.

56% 19% 6% 2% 2% 1% 0.4% 0.4%
Purchased goods and services Downstream transportation and distribution Upstream transportation and distribution Use of sold products End-of-life treatment of sold products Associate commuting Capital goods Business travel

To find lasting and scalable ways to reduce emissions, we are working with partners, universities and the scientific community.

Source: Mars Inc.