

# Future CCOs

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## Case Study

### Advancing Climate Protection Strategies at The Coca-Cola Company

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#### Abstract

*From August 2013 to August 2014, I served as the first fellow in the Association of Climate Change Officers' (ACCO) Future CCOs Fellowship Program. I was assigned to complete my fellowship with the climate protection team at The Coca-Cola Company working for Bryan Jacob, the Company's Climate Protection Director and chief architect of the Company's climate protection program dating back to 1993. The primary focus of my fellowship was working with the Company to explore options for meeting and tracking its newest, most ambitious carbon emissions reduction goal to date set in 2013: reduce the carbon footprint of the 'drink in your hand' 25 percent by 2020 (compared to a 2010 baseline). My research studied a variety of options the Company and its bottling partners – nearly 250 independent operators across more than 200 countries and territories – could implement to position Coca-Cola to meet its goal in the most economical and practical way. Through my work, I was able to learn a great deal about the business and, at the same time, provide meaningful insights and strategies to the team for this and other programs. The following is a summary case study of my principal project and recommendations for the Company. Content is based on my research, experience and observations, as well as published historical accounts.*

#### About the Future CCOs Post-Graduate Climate Fellowship Program

The Future Climate Change Officers Fellowship Program (Future CCOs) is designed to connect masters-level graduates with employer organizations seeking talented climate change practitioners. Centered on this professional talent pool, the program is establishing a professional track for graduates pursuing opportunities in climate change leadership.

Learn more about the current fellows and how to create a fellowship for climate related response efforts at your organization:

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## Introduction

The Coca-Cola Company (referred to as Coca-Cola throughout, not to be confused with the singular beverage brand with the same name) has ambitious plans to make lasting changes to its operations to lessen its impact on the environment. It seeks to decouple business growth from increasing carbon emissions by 2015 and to reduce the carbon footprint of its broader value chain 25 percent by 2020. To achieve these goals, the Company must consider every tool at its disposal.

In 2007, on World Environment Day, The Coca-Cola Company envisioned a business system with lower carbon emissions. The Company established its first-ever climate protection goals the following year. First, it sought to “grow the business, not the carbon,” or stabilize carbon emissions from worldwide manufacturing operations at 2004 levels while steadily growing sales through 2015, thereby working to disprove the tradeoff between economic and environmental prosperity. Second, it wanted to reduce absolute emissions over the same period by 5 percent from manufacturing plants in developed countries as defined by Annex I of the Kyoto Protocol,<sup>1</sup> a nod to the principle of “common but differentiated responsibilities” in international climate negotiations that calls on industrialized nations to do more to protect the climate since they arguably contributed more to the problem.<sup>2</sup>

Six years later in 2013, The Coca-Cola Company announced an evolved set of environmental targets with a 2020 deadline, including an aspiration to substantially reduce its carbon footprint as reflected in the following goal statement: “to reduce the carbon footprint of the ‘drink in your hand’ 25 percent by 2020.”<sup>3</sup> Unlike most prior goals at the Company or across the industry, this self-imposed target deliberately took aim at the broader value chain for greater impact. The new climate target looked beyond the walls of manufacturing operations: reduce the carbon footprint of “the drink in your hand” 25 percent by 2020. The “hand” implies the consumer at the tail end of the value chain with the opposite end starting with ingredients. Packaging, manufacturing, distribution and refrigeration round out the links in between. The target’s baseline year is 2010, when Coca-Cola’s value chain emitted approximately 59 million metric tons (or simply tonnes, borrowing the UK convention) of greenhouse gases (GHG) into the atmosphere. That’s roughly equivalent to the yearly emissions of Sweden,<sup>4</sup> and the Coca-Cola system’s footprint continues to grow as the business expands, though at a lesser rate than projected emissions without any intervention (referred to as ‘business-as-usual’, or BAU). Coca-Cola projects it must prevent more than 20 million tonnes of emissions in 2020 to achieve its 25 percent reduction target.<sup>5</sup>

Over the course of 2013 and 2014, Coca-Cola made laudable gains in its climate protection program. The Company is a big proponent of natural refrigerants for cooling,<sup>6</sup> and its global business system placed the one millionth hydrofluorocarbon-free (HFC-free) cooling unit that uses natural refrigerants (instead of synthetic) into the marketplace,<sup>7</sup> drastically cutting the potential contribution of its cold-drink equipment to global warming.<sup>8</sup> It distributed its 30 billionth PlantBottle™ package, a type of plastic packaging that’s partially made from renewable materials instead of carbon-intensive petrochemicals.<sup>9</sup> Its global manufacturing operations emitted 5.53 million tonnes of carbon emissions in 2013, which represented a 19 percent reduction from the 2004 BAU forecast. Indeed, progress was notable – manufacturing sites were making substantial gains in energy efficiency and using 20 percent less energy to produce each liter of product than in 2004. Plants in developed countries emitted 11 percent less carbon into the atmosphere than in 2004, delivering against the climate target for Annex I nations comfortably ahead of schedule. Global emissions were 1.28 million tonnes less than they otherwise would have been without interventions, yet the Coca-Cola system’s 2013 emissions were still 1 percent higher than the prior year emissions due to increasing consumer demand for Coca-Cola products. In fact, this meant that the system emitted 16 percent more carbon in 2013 than in 2004, jeopardizing the “grow the business, not the carbon” commitment.<sup>10</sup> The Company has made progress managing and reducing carbon emissions in developed markets; however, it has seen growth in carbon emissions in emerging and developing markets, which it is working to manage. With less than a year to go before the 2015 deadline, it is unclear whether Coca-Cola can still deliver against both pillars of its 2008 climate pledge, but the Company and its bottling partners remain committed to working toward established goals and to reducing their potential climate impacts.



Broadening the scope of Coca-Cola's climate targets beyond manufacturing operations will undoubtedly reveal new opportunities and challenges. Setting 2020 stretch goals for the value chain is also helping to refocus manufacturing plants on meeting the 2015 goal even as they work toward the broader 2020 objectives.

## **The Business Model of a Beverage Giant**

The formula for Coca-Cola was invented in 1886 by John Pemberton, a pharmacist in Atlanta, Georgia. Dr. Pemberton carried his "syrup" to Jacobs' Pharmacy, a modest local drug store, paired it with carbonated water and sold the mixture for five cents a glass as a fountain drink. Soon after, his partner and bookkeeper, Frank Robinson, penned what would become the indelible trademark "Coca-Cola" in his unique script for advertisements.<sup>11</sup> Asa Candler, who acquired Coca-Cola in 1891, played an instrumental role in Coca-Cola's early success by heavily promoting the product through coupons, novelty items bearing the trademark and other marketing materials. His aggressive merchandising saw syrup sales grow tenfold by 1892.<sup>12</sup> From there, Coca-Cola continued to grow into what it is today, a worldwide business system, comprised of the Company and its bottling partners, that produces, distributes and markets numerous nonalcoholic beverage products in nearly every country in the world.

The Coca-Cola system is a global business that operates on a local scale, which consists of the Company and its nearly 250 bottling partners. The Coca-Cola system is not a single legal entity, and the Company does not own or control most of its bottling partners. The Company sources ingredients as well as manufactures and sells concentrates and syrups to its bottling operations. It also owns the brands and leads consumer brand marketing initiatives. Bottling partners and some Company operations manufacture, package, merchandise and distribute finished branded beverages to customers, who then sell these products to consumers.<sup>13</sup> Concentrate manufacturing and bottling operations play complementary roles but have very different implications. Concentrate manufacturers can see operating margins of over 30 percent. Bottlers tend to boast higher revenues, but their margins can be less than a third of this at 8 percent.<sup>14</sup> With such tight margins, bottlers may find it challenging to invest in climate protection efforts despite the increasing focus on the value chain.

Whether looking at the Company or its larger business system, which encompasses the operations of its bottling and other partners, the scale of Coca-Cola is enormous by any measure. The Company commands more than 500 sparkling (carbonated) and still beverage brands. Twenty of these brands – brands like Coca-Cola, Simply and Dasani – have annual retail sales of more than \$1 billion each, and the trademark Coca-Cola portfolio in aggregate is valued at more than \$81 billion.<sup>15</sup> Together with its nearly 250 bottling partners, the Coca-Cola system employs approximately 700,000 associates who produce and distribute 1.9 billion beverage servings to consumers across more than 200 countries and territories each day.<sup>16</sup>



## Coca-Cola's Climate Protection Evolution

The Coca-Cola Company already had a track record in sustainability before it began grappling with the issue of climate change. It launched its first diet soda in 1963,<sup>17</sup> commissioned the world's first life cycle assessment (LCA) in 1969<sup>18</sup> and introduced lightweight plastic bottles in 1975.<sup>19</sup> Yet the company has also met with its fair share of controversy. In the lead up to the 2000 Summer Olympics in Sydney, Australia, Coke was the focus of a global online campaign by activist environmental NGO Greenpeace for the use of HFCs as refrigerants in vending machines, a greenhouse gas with substantial global warming potential, as noted above.<sup>20</sup> McDonald's and Unilever, peer consumer goods heavyweights and major sponsors of the Olympic Games, were also targets of the NGO's agenda. Before the start of festivities in 2000, all three companies worked with Greenpeace to announce plans to phase out HFC technology.<sup>21</sup> In the run up to the following 2004 Summer Olympics in Athens, the multinational triad cofounded a coalition with Greenpeace and the United Nations Environment Program (UNEP) called "Refrigerants Naturally!" to drive progress against HFC-free goals.<sup>22</sup> By the 2008 Beijing Summer Olympics, 100 percent of Coca-Cola's cooling equipment was HFC-free across all official Olympic Games venues, a first for the Company.<sup>23</sup>

An important theme in the HFC story was the marked shift in tone between the protagonist NGO and the antagonist Company over time. Greenpeace said in a 2007 feature article, "Coke announced recently that every vending machine it deploys for the Beijing Olympics next summer will be HFC-free . . . that's pretty cool."<sup>24</sup> The Company saw firsthand the value in partnering with an NGO to spark change internally and manage expectations externally.<sup>25</sup> The Company set up a climate practice, and collaboration with civil society would figure prominently in its overall strategy.

Around the time when Coca-Cola's relationship with Greenpeace began to flourish, climate protection history was being made externally. In 2003, disappointed by the inability of national governments to enact mandatory solutions to climate change, the Carbon Disclosure Project (CDP) began to survey the world's largest companies – the *Financial Times Global 500 (FT500)* index – about their carbon emissions on a voluntary basis, disclosing their findings publicly.<sup>26</sup> In a similar spirit, the World Economic Forum (WEF) launched the Global Greenhouse Gas (GHG) Registry, a Web-based platform for corporations to voluntarily register their GHG emissions inventories, at their annual Davos gathering in early 2004.<sup>27</sup> Later that year, Russia ratified the Kyoto Protocol, effectively saving the treaty from implosion.<sup>28</sup> The Protocol came into effect in early 2005 and bound signatory industrialized countries to mandatory targets for reducing emissions. In 2006, Al Gore's famous climate documentary, *An Inconvenient Truth*, hit theaters, further elevating the issue of global warming in the eyes of popular culture. Climate change was gathering momentum as a mainstream issue. In addition, the Company's designation as a *FT500* corporation meant it was among the first to receive CDP's annual climate change questionnaire. The Company then decided it was time to articulate a stronger voice in the conversation.

Internal meetings to formulate a climate strategy began in 2004, when Neville Isdell was the Chairman and CEO of the Company. Isdell, a 35-year Company veteran who had risen through the ranks on a strong international track record, was brought back from retirement in 2004 to run the Company. Isdell was also a self-proclaimed corporate do-gooder, having grown up in South Africa where he protested apartheid. "I'm an early convert to the environmental movement," he told *Fortune* magazine in an interview. Under his leadership, the Company set bold environmental goals in water conservation, packaging reuse and climate protection.<sup>29</sup> Commitment from the very top was crucial for vitalizing Coca-Cola's new climate program.

In 2004, Coca-Cola assembled a 10-person taskforce of experts to develop a climate plan. This involved assessing existing voluntary emissions programs for their strategic fit with Company priorities. The corporate environment team commissioned a study of the U.S. Environmental Protection Agency's (EPA) Climate Leaders Initiative, the WEF's Global GHG Registry, the WWF's Climate Savers Program and others, evaluating them against criteria such as geographic scope and ambition level. Considering its global footprint across more than 200 countries and territories, the Company was



advised to reject programs with strict geographic limits and embrace more ambitious, globally focused platforms like WWF’s Climate Savers. Enrolling in a global network such as the WEF’s Global GHG Registry to gain disclosure experience could also be deemed an interim step.<sup>30</sup> In 2005, work began on a formal business vision and metrics for climate protection. The Company had a rich history of engaging the WEF, and it joined the Global GHG Registry in 2006.<sup>31</sup> At the same time, conversations were underway with WWF, a close partner on water, about Climate Savers. In 2007, while describing Coca-Cola’s progress in climate protection at the opening plenary of the UN Global Leaders Summit in Geneva, Isdell uttered a simple but eloquent idea. He said that the Company’s aspiration was to “grow the business but not the carbon.”<sup>32</sup> His vision took shape and the Company formalized this goal the following year.

Over the years, the Company made substantial strides in climate protection, including big gains in manufacturing energy efficiency, HFC-free refrigeration and plant-based packaging<sup>33</sup> – the greatest areas of opportunity for reducing its climate impacts. Coca-Cola’s climate practice also evolved with new and emerging trends. The Company explored life cycle assessment work to inform its climate and water goals set in 2007 and 2008. Then in 2009, bottling partner Coca-Cola Enterprises (CCE) collaborated with London’s The Carbon Trust to pilot a new carbon footprint standard – Publicly Available Specification (PAS) 2050 – on Coca-Cola sparkling products. The pilot found that manufacturing made only a minor contribution to the lifecycle carbon footprint.<sup>34</sup> In an effort to refocus resources on new segments of opportunity beyond manufacturing, CCE announced an innovative climate target in 2011 to reduce the carbon footprint of the “drink in your hand” by a third from 2007 levels by 2020.<sup>35</sup> At the same time, Isdell’s successor, Coca-Cola’s new Chairman and CEO, Muhtar Kent, was championing carbon reduction targets internally through investments in upgrading distribution fleet, standardizing efficient cooling technologies and exploring renewable energy. Kent was also influencing greater impact with industry peers through his role leading The Consumer Goods Forum (CGF). Consequently, under Kent’s leadership, CGF pledged for its 400 member companies globally to move to natural refrigerants by eliminating HFC-based refrigeration.

Back in the U.S., Coca-Cola’s corporate team was also contemplating next steps for climate protection. One possibility was to adopt the CCE life cycle model. In its own life cycle assessment (LCA) work, the Company found that manufacturing accounted for less than a tenth of value chain GHG emissions.<sup>36</sup> Coca-Cola’s partners were also increasingly shifting their attention to the supply chain. With many firms already optimizing their own operations, thought leaders were looking beyond an organization’s four walls as the next frontier of opportunity. The Company eventually set a systemwide value-chain carbon footprint reduction target of 25 percent for the “drink in your hand” by 2020. Since then, the Company has completed a more detailed inventory of its value chain carbon footprint, showing that manufacturing is responsible for approximately 15 percent of life cycle emissions (Figure 1). Today, the Company’s priority is to develop and deploy tools to unlock carbon reduction opportunities in the value chain.

Coca-Cola’s Value Chain Life Cycle Emissions

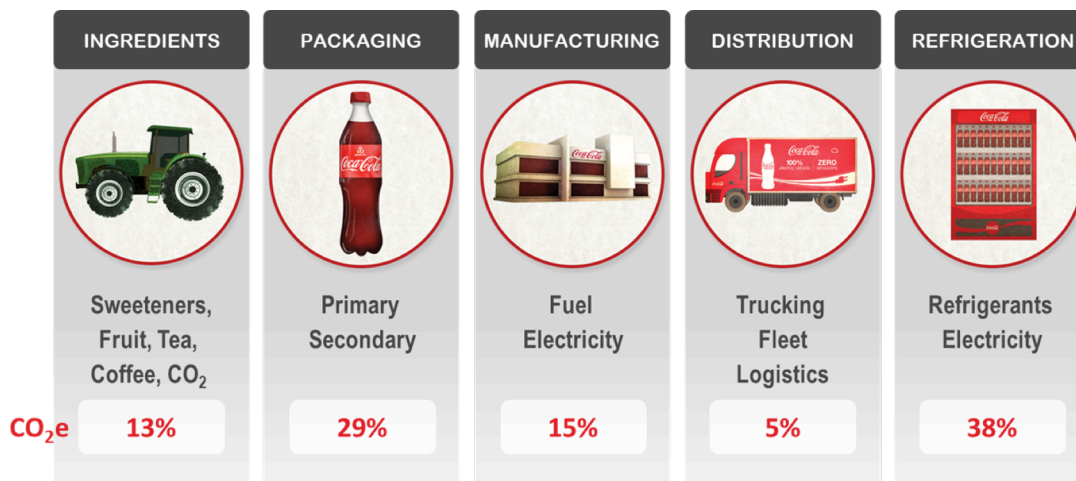


Figure 1: The Coca-Cola Company’s 2010 value chain carbon footprint





## Exploring the Next Phase Climate Strategy

The great majority of the world's scientists say that climate change is predominantly manmade. The Intergovernmental Panel on Climate Change (IPCC), an authoritative body of experts on the subject set up by the UN in 1988, attributes warming atmospheres, rising oceans, diminishing glaciers and more frequent cases of extreme weather to anthropogenic causes. Human activities such as burning fossil fuels, raising livestock and converting forests into farms emit carbon dioxide, methane, nitrous oxide and other potent GHGs – we can conveniently express all of these in carbon dioxide equivalents (CO<sub>2</sub>e or simply carbon equivalents) – which trap heat and causes it to build up in the Earth's atmosphere over centuries. The cumulative effect is the world's experts confirm that global warming is “unequivocal” today.<sup>37</sup>

Coca-Cola acknowledges that climate change may have long-term direct and indirect implications for its business and supply chain.<sup>38</sup> The Company relies on water and agricultural ingredients to produce its products and has noted that as the science indicates, pressures on natural resources will continue to grow as availability is challenged by climate change impacts. Given these considerations and its new, systemwide value chain goal, Coca-Cola has challenged its teams to explore innovative ways to reduce carbon impacts while continuing to responsibly grow the business. Four strategies are presented below:

- **Voluntary offsets** – Purchasing environmental commodities from voluntary markets that transfer the title of avoided carbon pollution to buyers is one potential option. Such commodities include carbon offsets from clean cookstoves, water purifiers and other small-scale development projects certified to voluntary standards, as well as Renewable Energy Certificates (RECs), instruments popular in the U.S. that convey the carbon benefits of electricity made from renewable energy technologies such as solar and wind.<sup>39</sup> Both Microsoft and Disney offset large swaths of their carbon footprint with such instruments.<sup>40</sup> In 2013, Coca-Cola paid a price of \$11.14 per voluntary offset to neutralize travel from using its corporate jets.<sup>41</sup>
- **Compliance markets** – The growing population of international compliance markets for carbon mitigation could also be instructive. The European Union's Emissions Trading Scheme (EU ETS), a mandatory cap-and-trade system started in 2005 and the oldest such market, has seen carbon allowances trading for as high as EUR 30 per tonne before the global financial crisis to as low as EUR 4 more recently. The Kyoto Protocol's Clean Development Mechanism (CDM), a related marketplace that allows industrialized nations to partially satisfy commitments by pursuing or helping to fund, or buying carbon offsets from, renewable energy or other climate friendly projects in developing countries, saw reduction certificates trading at EUR 3.86 and EUR 0.34 at the beginning and end of 2012, respectively.<sup>42</sup> Newer compliance markets include California's cap-and-trade program, where markets cleared at USD 13.62 per tonne in February 2013, during the first compliance period, and China's first ETS pilot in Shenzhen the same year – one of seven – which saw emissions allowances trading at an average price of approximately RMB 63 in the first four months.<sup>43</sup>
- **Marginal valuation** – There is no shortage of ideas for trimming carbon in the global economy,<sup>44</sup> but which ones are the most cost-effective and make the most sense for the Company? Another way to assess the worth of carbon to the Company is to model how much (in dollars) it would gain or lose by avoiding each incremental or marginal tonne of carbon equivalent until reaching the target, summing all economic costs and benefits, and prorating this sum across the total 20 million tonnes of abatement. Coca-Cola has conducted a marginal abatement cost curve (MACC) for the value chain, which accounts for this calculation and focuses on solutions that the Company already has experience implementing or modeling (Figure 2). The MACC calculation identifies 12 opportunities needed to abate slightly more than 20 megatonnes of GHGs across the Coca-Cola system in 2020, with the greatest levers coming from refrigeration and packaging (see Appendix for MACC methodology).

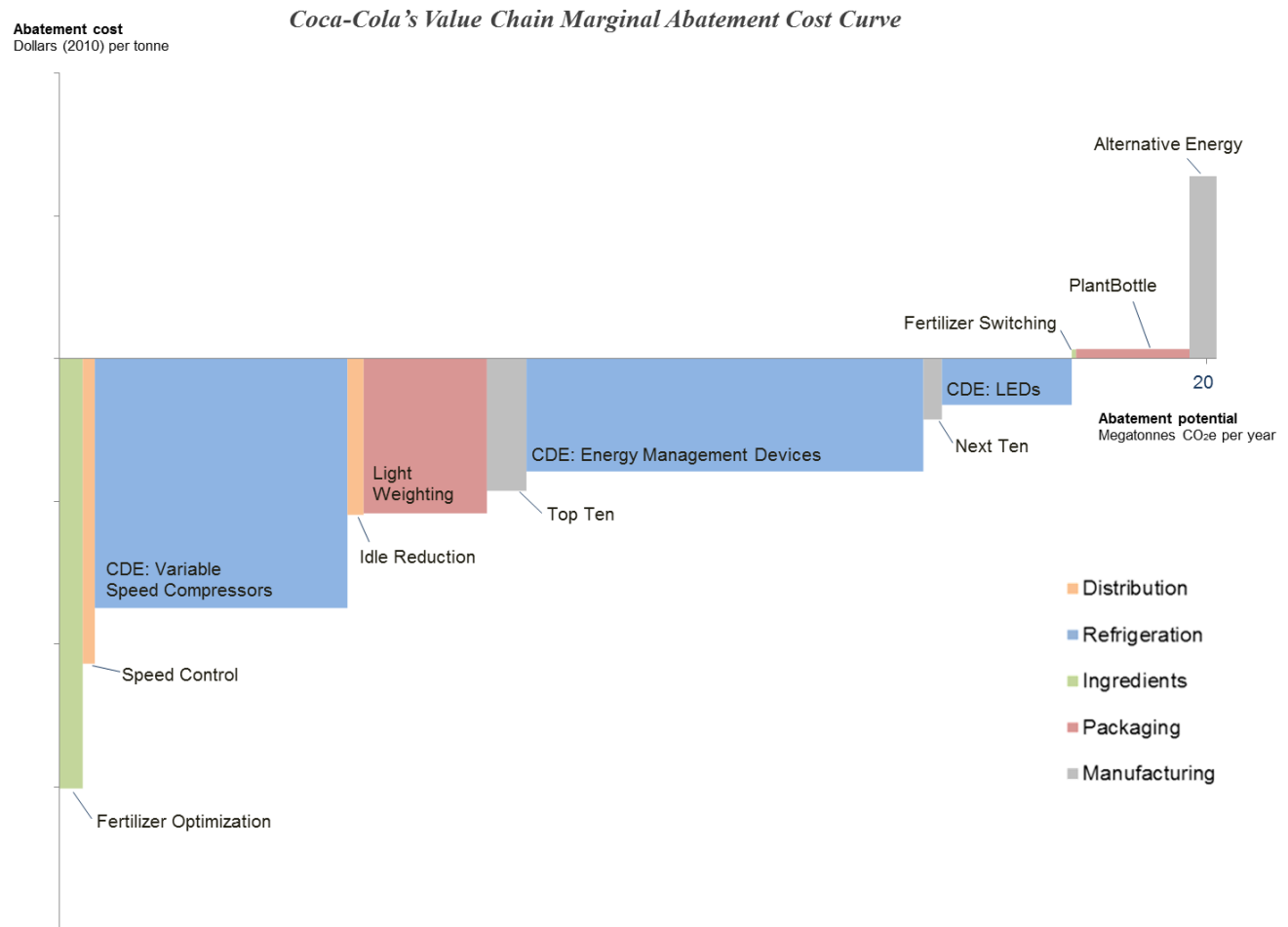


Figure 2: Coca-Cola's marginal abatement cost curve (MACC) for the value chain focuses on solutions that the company already has experience implementing or modeling and shows that only 12 opportunities are needed to abate slightly over 20 megatonnes of GHGs across TCCS in 2020

- Capital Fund** – Regardless of the valuation method used, all options are meant to raise awareness, incentivize managers to embrace low-carbon behaviors and spur investment in climate solutions. Some methods also allow a company to raise capital, and just like for valuation, there are multiple options available to a company for deploying capital, from spending it through a centralized corporate function to distributing it back to businesses directly. One promising deployment model is Johnson & Johnson's (J&J) Capital Relief Fund, a cache of capital that J&J earmarks solely for GHG reduction investments in order to provide relief to Business Units (BUs) from fierce capital competition. Under the scheme, corporate finance allocates roughly \$40 million to the fund each year, equivalent to approximately 10% of the energy budget, to invest in energy-saving projects like solar panels, efficient boilers and chiller optimization. Because these projects are well understood, offer predictable returns and are less risky, the fund has a hurdle rate of only 15 percent. J&J BUs apply for funding by detailing project costs, GHG reduction and other aspects, and submitting these along with a standard financial pro forma to a committee of energy, engineering and finance experts. The committee chooses the most compelling opportunities. Since the fund's inception in 2005, projects supported have achieved an average 19 percent internal rate of return (IRR).<sup>45</sup>



Upon assessment, pricing and valuation practices are not the current path forward for Coca-Cola. With its diverse system operating across nearly 250 independent bottling partners in more than 200 countries and territories, many factors create barriers to implementation in addition to having to balance capital expenditures and shareholder return. But, Coca-Cola is continuing to progress toward its goal to reduce potential climate impacts associated with its operations, focusing on adaptation and mitigation techniques as its primary reduction drivers. By remaining focused on advancing reductions and efficiencies across areas with the greatest impact to its carbon emissions, Coca-Cola will continue to drive strategies such as manufacturing energy use efficiency, HFC-free refrigeration and sustainable packaging. Coca-Cola is encouraging application of these and other strategies across its bottling partners and supply chain.

## Looking Ahead

Coca-Cola is almost 130 years old. At the beginning of the Company's journey near the turn of the 20<sup>th</sup> century, industry was growing and the Earth was rich with abundant resources. This is no longer the case today and success over the next century will depend on whether companies can find new ways to effectively manage limited resources. While climate protection is an important focus for the Company, it currently operates under the belief that a comprehensive response is required to successfully tackle the problem in which all stakeholders – business, government and civil society – must play a role.

Continuing to evolve its climate protection practice dating back to 2004, Coca-Cola has an opportunity to further reduce its carbon footprint by using the best possible mix of energy sources, improving the energy efficiency of its manufacturing processes and investing in new climate strategies where they do not compromise the business' financial performance, and by pushing successful strategies out to the broader supply chain. The principal areas of focus for Coca-Cola's climate efforts today are ingredient sourcing, packaging formats, manufacturing operations, distribution fleet and refrigeration equipment.

Looking ahead at the ambitious feat of achieving its 2020 climate target for the value chain, the Company needs innovative ideas that can help it to simultaneously meet its sustainability goals and bolster the business. In the end, any disruptive innovation will always come with steep risks and the potential for big rewards.

## Appendix

Coca-Cola's marginal abatement cost curve (MACC) builds on the methodology of McKinsey & Company's global greenhouse gas abatement cost curve and analyzes opportunities to reduce carbon emissions across the Coca-Cola value chain, spanning ingredients, packaging, manufacturing, distribution and refrigeration. The curve illustrates the abatement potential and economic implications of technically feasible actions or levers that can avoid carbon emissions and contribute to the company's commitment to reduce its value chain carbon footprint 25% by 2020.

Each bar in the curve represents an action, lever or technology that can lower carbon emissions in the value chain from a business as usual (BAU) scenario, also known as the baseline or reference case, which holds the carbon intensity of sales in 2010 constant through 2020. The width of each bar along the horizontal axis signifies the amount of carbon emissions that lever can abate from BAU in the year 2020 if the lever were applied across the entire Coca-Cola system, which covers all regions, countries and markets in which Coca-Cola products are sold. The height of each bar along the vertical axis represents the average net benefit or cost in dollars from implementing the full capacity of the lever over a 10-year period between 2010 and 2020. The benefit or cost side of the equation accounts for capital expenditures, operating expenses, operating savings and revenue growth over 10 years. The sum of these economic indicators, or the net





economic effects per year, are discounted by The Coca-Cola Company's weighted average cost of capital (WACC) in 2010 to assess levers on a present value basis (2010 dollars). Therefore, while the width of each bar reflects the abatement capacity of each lever in the year 2020, the height of each bar reflects the cumulative average net benefit or cost from installing each lever starting from 2010 until reaching full capacity in 2020 per metric ton of avoided carbon equivalent over the same period.

Coca-Cola's MACC is meant to portray what the company may stand to gain or lose in economic terms by achieving its 2020 value chain climate protection goal. However, uncertainty surrounds both the abatement and economic estimates of the analysis. All estimates rely on projections based upon models, extrapolation and expert views, which may not accurately reflect the future. Abatement estimates ignore interactions among levers, which may lead to double counting, and they do not address variation within levers (for example, the economics of alternative energy projects vary by market). Economic estimates ignore innovation (changing technology costs), transaction costs, regulatory effects and other aspects that may affect the feasibility of lever implementation. The MACC does not analyze capital expenditures that would occur in the BAU scenario.

<sup>1</sup> "The Coca-Cola System Announces New Global Targets." WorldWildlife.org. World Wildlife Fund, 30 Oct. 2008. Web. 19 Feb. 2015. <<http://www.worldwildlife.org/press-releases/the-coca-cola-system-announces-new-global-targets>>.

<sup>2</sup> "The Principle of Common But Differentiated Responsibilities: Origins and Scope." Centre for International Sustainable Development Law, 26 Aug. 2002. Web. 19 Feb. 2015. <[http://cisdl.org/public/docs/news/brief\\_common.pdf](http://cisdl.org/public/docs/news/brief_common.pdf)>.

<sup>3</sup> "The Coca-Cola Company and World Wildlife Fund Expand Global Partnership, Announce New Environmental Goals." The Coca-Cola Company. 9 July 2013. Web. 19 Feb. 2015. <<http://www.coca-colacompany.com/press-center/press-releases/the-coca-cola-company-and-world-wildlife-fund-expand-global-partnership-announce-new-environmental-goals>>.

<sup>4</sup> "CAIT 2.0: WRI's Climate Data Explorer." World Resources Institute. Web. 27 June 2014. <[http://cait2.wri.org/wri/Country GHG Emissions?indicator\[\]=Total GHG Emissions Excluding Land-Use Change and Forestry&indicator\[\]=Total GHG Emissions Including Land-Use Change and Forestry&year\[\]=2011&chartType=geo](http://cait2.wri.org/wri/Country%20GHG%20Emissions?indicator[]=Total%20GHG%20Emissions%20Excluding%20Land-Use%20Change%20and%20Forestry&indicator[]=Total%20GHG%20Emissions%20Including%20Land-Use%20Change%20and%20Forestry&year[]=2011&chartType=geo)>.

<sup>5</sup> "An Ambitious New Goal: Reducing Carbon in Our Value Chain." The Coca-Cola Company. Web. 19 Feb. 2015. <<http://www.coca-colacompany.com/an-ambitious-new-goal-reducing-carbon-in-our-value-chain>>.

<sup>6</sup> "The Coca-Cola Company." Refrigerants, Naturally! Web. 19 Feb. 2015. <<http://www.refrigerantsnaturally.com/statements/coca-cola.htm>>.

<sup>7</sup> Refrigeration equipment commonly uses hydrofluorocarbons (HFC) for cooling, which are over 1400 times more potent at causing global warming than using carbon dioxide (ironically) as a refrigerant. By switching from HFCs to natural refrigerants in one million coolers, the Company expects to prevent over 5 million tonnes of GHG emissions over the useful lives of the assets.

<sup>8</sup> "Coca-Cola Installs 1 Millionth HFC-Free Cooler Globally, Preventing 5.25MM Metrics Tons of CO<sub>2</sub>." The Coca-Cola Company. 22 Jan. 2014. Web. 19 Feb. 2015. <<http://www.coca-colacompany.com/innovation/coca-cola-installs-1-millionth-hfc-free-cooler-globally-preventing-525mm-metrics-tons-of-co2>>.

<sup>9</sup> Email correspondence. Lisa Mason-Sanders, PlantBottle Program Manager, The Coca-Cola Company. 14 Feb. 2015.

<sup>10</sup> "COCA-COLA 2013/2014 SUSTAINABILITY REPORT: Climate Protection." Web. 19 Feb. 2015. <<http://assets.coca-colacompany.com/ce/7d/8a2a904543a39b5e35e2e544cb0e/climate-report-pdf.pdf>>.

<sup>11</sup> "The Coca-Cola Company: Inventor of Coca-Cola: John Pemberton." The Coca-Cola Company. 1 Jan. 2012. Web. 19 Feb. 2015. <<http://www.coca-colacompany.com/stories/the-chronicle-of-coca-cola-birth-of-a-refreshing-idea>>.

<sup>12</sup> "The Asa Candler Era - The Coca-Cola Company." The Coca-Cola Company. 1 Jan. 2012. Web. 19 Feb. 2015. <<http://www.coca-colacompany.com/stories/the-chronicle-of-coca-cola-the-candler-era>>.

<sup>13</sup> The Coca-Cola Company. (2013). *Annual report 2013*. Retrieved from <<http://www.coca-colacompany.com/investors/annual-other-reports>>.

<sup>14</sup> Yoffe, David B. and Renee Kim. *Cola Wars Continue: Coke and Pepsi in 2010*. Case Study. Boston. Harvard Business Publishing, 26 May 2011.

<sup>15</sup> "2014 Rankings - Best Global Brands." Interbrand. Web. 19 Feb. 2015. <<http://www.bestglobalbrands.com/2014/ranking/>>.

<sup>16</sup> "Coca-Cola At A Glance: KO101 Video and Infographic." The Coca-Cola Company. Web. 19 Feb. 2015. <<http://www.coca-colacompany.com/our-company/infographic-coca-cola-at-a-glance>>.

<sup>17</sup> "TaB – Our First Diet Drink." The Coca-Cola Company. 22 June 2008. Web. 19 Feb. 2015. <<http://www.coca-colacompany.com/history/2008/06/tab-our-first-d.html>>.

<sup>18</sup> "A Brief History of Life Cycle Assessment (LCA): PE INTERNATIONAL." PE International. Web. 19 Feb. 2015. <<http://www.pe-international.com/america/company/newsroom/news-detail/article/a-brief-history-of-life-cycle-assessment-lca/>>.

<sup>19</sup> "Coke and Recycling in the 1970s." The Coca-Cola Company. 20 Apr. 2010. Web. 19 Feb. 2015. <<http://www.coca-colacompany.com/history/2010/04/coke-and-recycling-in-the-1970s.html>>.



- <sup>20</sup> "Greenpeace Unveils Global Campaign Challenging Olympic Polluter Coca-Cola." Greenpeace. 1 June 2000. Web. 19 Feb. 2015. <<http://www.greenpeace.org/usa/en/media-center/news-releases/greenpeace-unveils-global-camp/>>.
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