Autodesk Sustainability

# C-FACT Questions and Answers

The Corporate Finance Approach to Climate-Stabilizing Targets, or C-FACT, is a novel corporate greenhouse gas target-setting methodology developed by Autodesk that is business friendly, science driven, and transparent. The methodology is also available for free.

Visit www.autodesk.com/C-FACT for a video tutorial, white paper, and latest spreadsheet template. Email us if you are testing C-FACT for your company, or if you have questions or suggestions.

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**1. What makes C-FACT unique?**

The Intergovernmental Panel on Climate Change (IPCC) reports that for climate stabilization to occur, industrialized countries need to reduce their absolute greenhouse gas (GHG) emissions by roughly 85 percent by 2050. The Corporate Finance Approach to Climate-Stabilizing Targets, or C-FACT, calls for companies to reduce GHG emissions in line with these scientific climate stabilization targets, and in proportion to companies' relative contribution to the economy.

The three underlying principles of C-FACT are:

1. Verifiability—Uses only publicly available financial and GHG disclosure information,[1] enabling 100 percent verifiability and transparency of measurements, metrics, and performance.
2. Flexibility—Adapts to changing economic conditions, organic and inorganic changes in business, and inevitable deviations of real performance versus intended financial and GHG targets.
3. Fairness—Acknowledges that corporate commitments should be proportional to their relative contribution to the economy, not to the corporation's existing size and carbon footprint. The principle recognizes that GDP growth is correlated with emissions growth. Therefore, it encourages the gradual decoupling of GDP contribution from emissions growth at the company level, but does not penalize a company if it begins to contribute a greater proportional share of GDP (for example, capturing market share).

**2. How does the C-FACT methodology work?**

Although deriving a corporate GHG target that is fair to both business and the environment can be a complex task, the following four steps simplify the process:

1. **Calculate**—Divide the company's GHG footprint by its contribution to GDP as measured by gross profit divided by world GDP,[2] and approximate growth rates through 2050 using analyst or internal financial forecasts to derive the Carbon Intensity Reduction Rate.
2. **Commit**—Select a time frame and commit to a target publicly.

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[1] The majority of public companies now disclose their carbon footprints, and the number increases daily (Source: www.cdproject.net/en-US/Results/Pages/Responses.aspx?Search=True&Programme=1&Year=2009).

[2] Contribution to GDP is the best universally available measure of the value added by a company to the economy. (See value-added approach to calculating GDP in "Measuring the Economy: A Primer on GDP and the National Income and Product Accounts," Bureau of Economic Analysis, U.S. Department of Commerce, 2007). The economic literature demonstrates that a good proxy for a company's contribution to GDP is gross profit (commonly defined as revenues minus costs of goods sold). The equation Gross Profit = Revenues − Cost of Goods Sold is used as a proxy for contribution to GDP (or a company's Value Add). While a company's net profit could be negative after taking into account operating expenditures, taxes, interest, and depreciation/amortization, as long as a company has revenues, its gross profit (and hence its contribution to GDP) should be positive even in down years. The other way to arrive at Value Add is EBITDA + Operating Expenditures (including employee costs, research & development, general & administrative, marketing/sales, and so forth). This could be used in cases when a company is not generating revenue (for example, early-stage startup).

3.  **Annualize**—Annualize the reduction goals over the commitment period to reduce the short-term volatility and derive annual reduction goals.
4.  **Adjust**—At year end, take into account new numbers for GDP, actual financial performance, and actual carbon footprint and make adjustments. Diffuse positive or negative deviations from the GHG target over a fixed number of years.

Once a company establishes its intensity-based reduction goal, the next step is to translate that to corporate- and division-level absolute targets. This happens in Step 3 of the C-FACT methodology. From here, each division gets clear marching orders and can then make investments based on business cycles.

To walk through this methodology using real numbers, visit the white paper at www.autodesk.com/C-FACT. Email us if you would like to receive a free Microsoft® Excel® template to help you follow the C-FACT methodology.

### 3.  Why did Autodesk develop C-FACT?
As a world leader in 2D and 3D design, engineering, and entertainment software, Autodesk and its tools help enable innovative, achievable solutions for a more sustainable world. By modeling sustainable business practices, including new corporate best practices on carbon accounting and target setting, Autodesk inspires peers and business partners to espouse similar leadership positions. For details on Autodesk's carbon footprint, corporate environmental management system and governance, emissions reduction projects, work with vendors, and use of Autodesk software to measure and reduce emissions, go to www.autodesk.com/sustainable-design.

### 4. What inspired the development of C-FACT, and who did Autodesk work with to develop the methodology?
During the C-FACT development process, Autodesk consulted with the U.S. Environmental Protection Agency (EPA), the Climate Group, World Resources Institute, and Clear Carbon Consulting. In fact, World Resources Institute and the EPA invited Autodesk to speak on C-FACT at their annual corporate events.

Inspiration was drawn from BT's Climate Stabilization Intensity model,[3] which was developed in 2008 by Chris Tuppen, chief sustainability officer, BT, UK, and Professor Jorgen Randers, Norwegian School of Management. This model introduced the idea that corporate carbon emissions should be set relative to economic value add. Yet there are major differences between the two models. BT's value-add equation depends on confidential information (such as employee costs) and is unique to countries with value-added accounting measures. C-FACT simplifies and makes operational the concept that corporate carbon emissions should be set relative to economic value add, but uses gross profit (Revenues – Cost of Goods and Services Sold) instead, as it is universally measured, publicly available for publicly traded companies and aligns with common

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[3] Source: http://christuppen.com/documents/CSI_Methodology.pdf.

approaches of calculating GDP.[4] Further, carbon intensity (GHG footprint/Value Add) is normalized to world GDP, to get a *fair* estimate of a company's contribution to GHG reductions. Finally, the C-FACT model is flexible, as users may allocate deviations of actual performance from their target, over a fixed time span (for example, five years). This is called "error diffusion" (see question 12).

**5. What types of organizations are considering C-FACT?**
- Over 100 companies, large and small, have downloaded the C-FACT methodology in spreadsheet format ([www.autodesk.com/c-fact](www.autodesk.com/c-fact)) and are testing it right now.
- Major companies like EMC have adopted it, customizing it to their needs.
- SAP is incorporating C-FACT as a module into its enterprise carbon accounting tool (see [www.sap.com/solutions/sustainability](www.sap.com/solutions/sustainability)).

**Note:** While C-FACT was designed with public companies in mind, nonrevenue-making startups and nonprofit organizations can also use an alternate proxy for contribution to GDP, such as EBITDA + Operating Expenses (this includes marketing, sales, research & development, and general and administration).

**6. Does C-FACT qualify for the EPA Climate Leaders' target-setting process?**
As the EPA Climate Leaders program is moving to require only absolute goals from its members, it is worth noting that while the C-FACT methodology is based on carbon *intensity*, it allows a company to project its *absolute* reductions over a selected time horizon, and hence complies with the EPA's requirements.

**7. How does C-FACT relate to scientific goals for mitigating climate change?**
A recent analysis of the GHG targets of the Global 100 found that, at the current rate, the reductions necessary to stabilize the climate will be achieved 39 years too late.[5] To address this issue Autodesk derived a corporate target, C-FACT, which first sets the initial trajectory based on the prevailing climate science and then back-calculates the intensity reduction rate needed to meet the scientific community's stated 2050 climate stabilization goal.[6] Every year the company's environmental performance is measured against this target, and by using error diffusion over a five-year sliding window (or shorter), any deviation from this path is addressed over a short time frame.

**8. How does C-FACT enable adaptation to changes in financial forecasts?**
Carbon intensity is calculated by taking financial projections *and* environmental performance into account. Just as companies may over- or underestimate their financial targets, so might they surpass or miss their GHG reduction targets. In such situations,

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[4] See note 2.
[5] Carbon Disclosure Project, "The Carbon Chasm," 2009.
[6] Intergovernmental Panel on Climate Change, "Climate Change 2007: Synthesis Report of the IPCC Fourth Assessment Report," 2007.

error diffusion allocates the deviation of the actual performance from the emissions target over a sliding window of time. This approach has two primary benefits:

- It allows companies to plan appropriate investments. For instance, a company may wish to invest in a new technology (for example, solar panels), which requires capital outlays. In this case, error diffusion helps to account for reductions that would come further downstream.
- It holds companies accountable to committed targets and forces them to compensate for missing their targets in a short time span. As a result, a company's underperformance does not accrue over a long time, jeopardizing its climate-stabilizing trajectory.

### 9. What is the benefit of using a carbon intensity method versus an absolute reduction method?

Climate scientists and policy experts recommend that industrialized countries take the lead in reducing emissions. More specifically, they are recommending a roughly 85 percent absolute GHG reduction by industrialized countries by 2050. However, despite good intentions and the best measurement and projections, attempts by individual companies to set targets 40 years out in order to achieve absolute 2050 goals would likely be arbitrary and inaccurate. So many corporate targets are a simple intensity target, using revenue or the number of employees as the denominator.

In contrast, C-FACT's intensity metric allows for companies' carbon footprints to grow as their profits grow, but *in relative proportion to world GDP*. The underlying logic is that, as one company grows at a faster pace than the economy as a whole, other companies are shrinking in proportion. While all companies must be accountable for their share of total absolute emissions reductions by 2050, the burden can shift between several companies over a 40-year span of time based on their fair share of the economy (and hence fair share of emissions).

This more nuanced approach to intensity metrics also better accounts for *in*organic business changes through acquisitions and divestitures than simple intensity metrics based on revenue.

### 10. It appears that the C-FACT methodology enables one to justify an *increase* in carbon emissions while advocating climate stabilization. Can you explain that?

Setting an absolute emissions reduction target that is unrelated to GDP growth makes sense for a macro-economy (for example, the world economy taken as a whole), since climate stabilization requires that the atmosphere reach 350–450 ppm carbon dioxide concentrations by 2050. This is why climate scientists have recommended that industrialized countries reduce their GHG emissions by 85 percent by 2050, and developing countries reduce their emissions by at least 50 percent.[7]

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[7] Intergovernmental Panel on Climate Change (2007), Climate Change 2007: Synthesis Report: Fourth Assessment Report.

However, if we look *inside* a macro-economy that is growing at a steady state, we can see that individual companies grow (or shrink) at wildly varying rates. A rapidly growing company is therefore counterbalanced by one or more companies that are declining. As we have no way of predicting to what extent each company within a macro-economy will grow or shrink in a given decade, setting an absolute target for each individual corporation does not make sense. To take an extreme scenario, a company could grow at an excessive rate and take over the entire economy by 2050. Its 2050 footprint (which would equal the world's entire corporate footprint), could be 85 percent lower in total (that is, climate stabilizing), but would be many times its baseline footprint, and therefore look like an increase.

**11. Which types of emissions are considered in the C-FACT methodology?**
C-FACT is a methodology for GHG target setting and does not take specific GHGs into consideration. It is applicable to Scope 1, 2, and 3 emissions, as defined by the [WRI/WBCSD GHG Protocol](#). As part of Autodesk's commitment to model sustainability best practices, the company includes a large range of business activities in its footprint, including Scope 3 emissions (eg leased facilities, business travel via air or car rental, employee commute, events and data center vendors). While Autodesk doesn't have direct control over these emissions, they would not exist if it weren't for the company's business activities or purchases. By including them, we are better able to understand how our business activities influence our vendors' carbon footprints and extend our influence to improve [our vendors' impact on the environment](#).

Autodesk is one of 60 corporations taking part in the GHG Protocol Road Testing Process, piloting the new draft the Scope 3 Standard, one of the new additions to the GHG Protocol. We hope that this standard, combined with regulatory clarity, will help address the challenge of emissions "leakage," when companies effectively outsource emissions by outsourcing emissions-intensive activities.

**12. Does C-FACT use "real" or "nominal" values for revenue and GDP growth rates? Why?**
Because most financial projections are in "nominal" values, C-FACT uses nominal values for financial projections and current values for GDP per the IMF World Economic Outlook Database. Converting them to "real" dollars would have introduced an additional layer of financial modeling complexity. It would also make comparisons across industries or companies difficult, as companies could be using different base years. There is no standard base year for GHG footprinting across companies, hence converting all numbers to a base year would have been arbitrary.