CORPORATE RESPONSIBILITY RANKINGS

THE PLAN

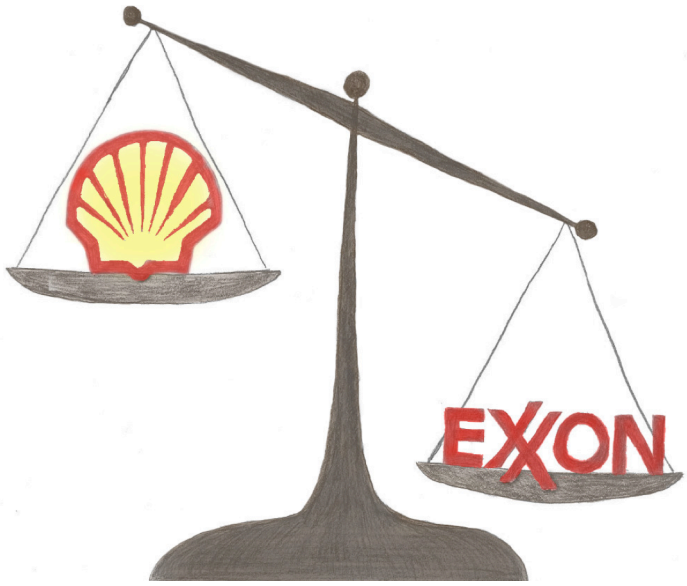
Details on how Corporate Responsibility Rankings would work, including What Is CRR?, The Metrics, Data Needed, and Additional Notes.

Contents

What Is CRR?

CRR is a proposed federal law. Should it be passed, Corporate Responsibility Rankings would rank all companies by how responsible they are. Those rankings would then be posted as CRR labels in all storefronts and on all products sold in the country. It's kind of like Nutrition Facts, only for how good or how harmful that company is for the world.

To calculate the rankings, ten metrics would assess how well each business treats its Workers, the Environment, and the Communities in which they operate. More specifically those metrics would assess each company by:



<u>Workers</u>

- How evenly it distributes its pay
- How well its lower-level employees can make a decent living on their wages
- How well it protects its workers' safety and health

<u>Environment</u>

- Its carbon footprint
- How much other (non-greenhouse) pollution it creates
- How recyclable and biodegradable its products are
- How much water it uses

<u>Community</u>

- How well it pays its fair share of taxes
- What percent of its proceeds go to charity
- How often it relocates its jobs

Each quarter, the best company in each of these three categories would get a 10, the worst would get a 0, and all others would be ranked accordingly in between. The Workers, Environment, and Community scores would then be averaged into one composite score for each company.

To make all of this work, the government would first use data that businesses already report each year—like how much money they make, how much they pay their employees, how much they pay in taxes, and how much they donate to charities. Businesses would then report some new data, too—like what they're buying, what they're selling, what resources they're harvesting from the land, and how much they recycle. Put together, that data would automatically be run through algorithms to form each business's new CR Rankings every quarter. A new division of the government, the Corporate Responsibility Bureau, would oversee the collection of data and the calculation of rankings. The CRB would also periodically make any needed changes to the system to make sure it is

as efficient and effective as possible.

Keep reading below to learn more about CRR's Metrics and how they would be calculated, about all the specific Data Needed for the ranking system, and about many Additional Notes that finish fleshing out how CR Rankings would work.

The Metrics

Workers

- Distribution of Wealth 40%
- Pay Relative to Local Standard of Living 40%
- Worker Safety & Health 20%

Environment

- Carbon Footprint 40%
- Non-Greenhouse Pollution 30%
- Biodegradability & Recyclability 15%
- Water Use 15%

Community

- Shouldering the Tax Burden 40%
- Charitable Giving 40%
- Job Location Stability 20%

Additional Factors

Each company's CR Rankings would be determined by the ten main metrics above. To convert metric scores into rankings, each metric has a weighted percentage that determines how much it factors into the appropriate sub-ranking. For example, a company's Carbon Footprint makes up 40% of its Environment score while its Water Use only accounts for 15%, simply because we have deemed the carbon footprint to be more important. For more specifics on each metric, including the math used to calculate it and why the metric matters, see the sections below.

Why these particular ten metrics, you might ask? Well, there are two important qualifications for each CRR metric. The first is that it measure corporate responsibility—that is, the behind-the-scenes ways a business can help or hurt the world. For instance, when a bakery avoids paying its taxes and creates unsafe working conditions, it does harm to the world in a way that isn't evident when looking at the bakery's bread in the store. Metrics that measure that kind of harm thus fit well into CRR.

The second qualification is that each metric must help compare different companies in an algorithm-based system. And to work in such a system, each metric must be both *universal* and *quantifiable*. In other words, each metric must a.) apply to most of if not all companies and b.) measure something that can be easily quantified through objective data. For instance, pretty much every business on the planet pollutes and pays wages. Furthermore, such pollution and pay are measurable with objective data. Each employee earns an exact yearly amount. Each office building uses a certain number of kilowatts of electricity each year (and thus tons of CO_2). By sticking to metrics that are universal and quantifiable, we enable fair comparisons of all companies. What's more, by doing so we greatly limit the number of subjective judgment calls that need to be made, making CR Rankings all the fairer for businesses and all the easier for the government to implement.

However, there will always be some aspects of corporate responsibility that will *not* be both universal and quantifiable. Thus, the eleventh metric—Additional Factors—will cover the rest. The Corporate Responsibility Bureau (CRB) will, through this metric, add or subtract points to individual companies when deserving—for example adding points for creating a cheap new lighting system for the extreme poor, or subtracting points for trying to report a fake number of gallons of gas burned.

With these eleven metrics combined, we believe we have created a system that measures corporate responsibility in a way that is comprehensive, simple, and fair.

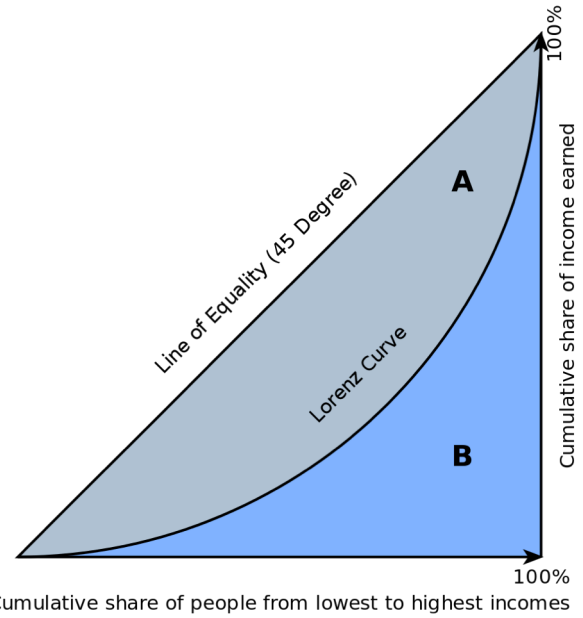
Note, however, that the exact metrics CR Rankings use and the weighted percentages each metric is given would all be subject to change. As decided by the CRB, metrics could be created, eliminated, split, or combined (so long as they are all universal and quantifiable). What we present here is our proposal for the starting point.

Distribution of Wealth

The Metric: How evenly a company distributes its pay

The Math: Reverse Gini coefficient (with graph of Lorenz curve): $1 - \frac{A}{A + B}$

To calculate the Gini coefficient, the "Lorenz curve" graphs out, for each company, the percentage of total worker compensation (y) given to that bottom percent of workers (x). So, for example, having a y-value of 13% at an x-value of 20% means the lowest paid 20% of workers earn 13% of all total pay. Each point is thus plotted out from left to right and generally forms a curved line. If a company were to give everyone equal pay, then the Lorenz curve would be a straight, diagonal line (and would then match up with the Line of Equality). The more unequally pay is distributed, the farther the Lorenz curve bends toward the bottom right corner. Mathematically, the Lorenz curve splits the triangle in the graph into two sections. With the top left A and the bottom right B, A/(A + B) gives the Gini coefficient. The Gini coefficient ranges from zero to one, zero representing perfect equality, one total inequality. The Gini coefficient was developed over a century ago by Italian statistician Corrando Gini, but it is still generally



Reidpath/Wikipedia

considered the best basic measurement of income inequality. With no need to reinvent the wheel, we therefore use the Gini to measure the inequality in each company's distribution of wealth.

One small note is that all CRR metrics have been set up in such a way as to yield the highest scores for the best companies and the lowest scores for the worst. Since the Gini coefficient normally works opposite to this scheme, we have subtracted from 1 to reverse the numbers.

Percentage of Workers Ranking: 40%

Data Needed:

- Total wages given to each employee in all forms of compensation (collected by the IRS with forms 1040, W-2, and 1099 MISC for individuals and forms W-2, W-3, 1120, and 1120S from businesses)
- Total hours worked by each employee (also newly including employee's age, gender, and race/ethnicity) (FLSA required wage records now to be submitted as part of each employee's W-2 form)
- Employee verification of total yearly hours worked (on individual tax return form)
- Employee indication of whether part-time work was or was not by choice (on individual tax return form)
- Records of all corporate purchases (by item type, item quantity, and EID of company purchased from, if available; this includes all raw materials, commercially packaged materials, and services rendered)

How It Works: The Distribution of Wealth metric ranks companies according to how well they distribute their pay to all of their workers. The more even the distribution of wealth, the higher the company's ranking will be. The more wealth is concentrated at the top, the lower the ranking.

Why We Need It: The Distribution of Wealth metric provides a powerful incentive for companies to pay their employees more evenly. By doing so, the DOW metric would go a long ways towards reducing income inequality.

Over the last couple of centuries we have done quite a bit to tackle inequality. We have created government initiatives like progressive tax codes, Medicaid, food stamps, Pell Grants, earned income and child tax credits, public housing, Head Start, and public schooling. All of these programs redistribute many hundreds of billions of dollars a year, helping level the playing field by funneling money to and enfranchising the poor. But despite these massive redistributive measures, *inequality has continued to steadily rise*, for the last several decades here in the US and for the last couple centuries globally. We discuss the failure of such programs to address income inequality at greater length in Our Current Approach Is Doomed to Fail, but the basic idea is that these government initiatives are outmatched. Much less, these programs do little to nothing to change the basic forces of capitalism. So long as capitalism rewards companies that funnel money towards the rich and increase inequality, companies will continue to do so.

The DOW metric, however, would give companies their first real financial incentive to lower inequality in their payrolls. Thus, with time, we could stand to see a major global reduction in the gap between the rich and the poor. Reducing that gap would then ease all kinds of problems with it: malnutrition, lack of health care, government deficits, obesity, other diseases of poverty, the racial

and gender pay gaps, and of course poverty itself (along with the stress, poor health, and general misery that come with it).

For more on the vital impact of the DOW metric, see Problems CRR Can Help Fix in Why CRR?—specifically the sections on Income Inequality, National Deficit and Debt, Diseases of Poverty, Gender Pay Gap, Racial Pay Gap, Obesity Rates, and Exploitation of Unpaid "Internships."

Pay Relative to Local Standard of Living

The Metric: Comparison of the yearly pay given to the lower half of a company's workers to the local standard of living. More specifically, the metric would rank the pay of each company at six percentiles—entry-level pay, the 10^{th} percentile, the 20^{th} percentile, the 30^{th} percentile, the 40^{th} percentile, and the 50^{th} percentile.

The Math: $\frac{P}{C}$

C = Median cost of living where the company's work is done
P = Yearly pay given at each of six percentiles

"Pay" simply means how much someone at each of the six percentiles is paid for their work. So, how much money does someone at the bottom make in one year, how much does someone at the 10^{th} percentile make in one year, etc. This includes all forms of compensation—wages, health care, stock, pensions, tips, bonuses, etc.

"Median Cost of Living," meanwhile, is essentially how much it costs on average to live near one's job. More specifically that means the amount of money needed to sustain a family of four by paying median housing, utilities, food, transportation, and health care costs in any given locality. If these median costs for a locality do not already ensure adequate access to safe housing, clean water, sanitary waste disposal, the fulfillment of basic caloric needs, a K-12 education for all children in the family, and reliable internet access, then the gap between the average estimated cost of fulfilling any of these basic needs and the actual median living costs will be added to the Median Cost of Living monetary sum for each county/city. This is an important distinction in areas where, say, the average person doesn't have adequate access to clean drinking water or to the internet. The median cost of living for such a locality would therefore still include however much it costs to install plumbing and internet infrastructure.

Percentage of Workers Ranking: 40%

Data Needed:

- Total wages given to each employee in all forms of compensation (collected by the IRS with forms 1040, W-2, and 1099 MISC from individuals; and forms W-2, W-3, 1120, and 1120S from businesses)

- Total hours worked by each employee (also newly including employee's age, gender, and race/ethnicity) (FLSA required wage records now to be submitted as part of each employee's W-2 form)
- Employee indication of whether part-time work was or was not by choice (on individual tax return form)
- Records of all corporate purchases (by item type, item quantity, and EID of company purchased from, if available; this includes all raw materials, commercially packaged materials, and services rendered)
- Median yearly housing costs (by locality, globally)
- Median yearly utility costs (electricity, heat, water, gas, internet) (by locality, globally)
- Median yearly food costs (by locality, globally)
- Median yearly transportation costs (by locality, globally)
- Median yearly health care costs (by locality, globally)
- Lowest cost for safe basic housing (by locality, globally)
- Lowest cost for clean water access (by locality, globally)
- Lowest cost for sanitary waste disposal (by locality, globally)
- Lowest cost for fulfillment of basic caloric needs (by locality, globally)
- Lowest cost for K-12 education (by locality, globally)
- Lowest cost for reliable internet access (by locality, globally)

How It Works: The PRLSL Metric ranks companies by how well their lower-level employees can afford to live in the areas where they work.

Even if a company distributes its pay evenly among all employees (which would score it a high ranking on the Distribution of Wealth metric), this still might not ensure the employees are actually paid well. In other words, it could be the case that everyone gets paid similar yet low amounts. A factory owner in China, for example, could pay all one thousand of his employees the same $5 a day. Surely we would not want to just reward such a company with high rankings for its equality of pay if the employees don't make enough to buy food and pay rent. On the flip side, a company could get a low ranking on the Distribution of Wealth ranking even while it actually still pays its lowest employees rather well compared to their peers. A US car company might, for example, pay its executives hundreds of millions yet still pay its factory workers more than those who assemble cars in Japan and Korea. That company should still get low rankings for its poor distribution of pay, sure, but it should also be rewarded for giving its factory workers enough to live well.

Thus, in addition to the Distribution of Wealth metric we have the Pay Relative to Local Standard of Living metric. The PRLSL metric ranks each company by how well its lower-paid half of workers can get by on their salaries.

Why We Need It: Simply put, there are plenty of workers out there who don't make enough money to make ends meet. Everyone working a full-time job should be able to afford the basics, to put food on the table and a roof over one's head. The Pay Relative to Local Standard of Living metric would push companies to finally end such unnecessary hardship for the working poor.

It's important to note here that many would defend such low-paying jobs in the market because, hey, we all start somewhere. That low pay should then motivate you to pull yourself up by your bootstraps and fight for something better, they say. To some degree that's absolutely true. Some amount of inequality in the workplace is quite a healthy motivator. Why would anyone go back to school and apply for new, more difficult jobs if it didn't mean getting higher pay? That being said, though, some people will always have to work the lower-paying jobs. Someone will always have to be the one to serve the food, to sweep the floors, and to answer the phones. Shouldn't those hardworking someones still be paid enough to live decent lives? As income inequality rises, however, getting enough pay to make ends meet becomes harder and harder for those at the bottom. The PRLSL metric would work to reverse that trend.

More specifically, the PRLSL metric pushes companies to do two important things. First, it encourages them to pay their workers well enough to get by even where it's more expensive to live. Want to locate a hedge fund office in Manhattan? Okay, great. However, the cost of living there is much higher than it is in, say, Ohio. So if you want to pay your janitors and security guards the same $10 wage that you do at your Cincinnati office, then be prepared to get a lower CR Ranking with the PRLSL metric. Like all other companies, that hedge fund would be pushed to pay its low-wage workers enough to get by, even in more expensive locations.

Second, the PRLSL metric would push businesses to legitimately pay their low-wage workers well where the cost of living is *lower*, too. In other words, businesses often move their operations to places where the cost of living is low. If your employees would pay less for rent in Cincinnati, then why not move the business to Cincinnati because you won't have to pay as high of salaries for your employees to live just as well? For the most part such trimming of costs just makes good economic sense. After all, it means cheaper products for the rest of us to buy. The problem is when moving jobs to where the local cost of living is the lowest turns into exploitation. Moving your jeans company to Bangladesh to take advantage of a lower cost of living isn't necessarily bad in itself. What's bad is to not pay these workers enough to escape substandard housing and to have decent health care. At $19 a month,[1,2] the minimum wage often paid to factory workers there is definitely not enough to afford such basics. The PRLSL metric would push such companies to shape up and pay livable wages no matter where its workers live.

For more on the benefits brought from the Pay Relative to Local Standard of Living metric, see the Problems CRR Would Help Fix within the Why CRR page—specifically the sections on Income inequality, Diseases of poverty, Racial pay gap, Obesity rates, and Exploitation of unpaid "internships."

Worker Safety & Health

The Metric: How well each company protects the safety and health of its employees. That means a.) the number of work-related illnesses, injuries, and deaths per 100 employees each year, and b.) the average Employee Rating of Safety & Health for

each company, that is, how well each company's employees rate it on seven questions given each year as part of the federal individual tax return.

The Math: $\frac{I_1S_1F_1 + I_2S_2F_2 \ldots}{E}$ and $\frac{P}{E}$

E = Total number of full-time employees (with each part-time employee counting as a fraction of one relative to how many hours were worked during the year)
F = Fault of employer for illness, injury, or death, as judged subjectively by physician or, when self-reported, employee on a 0 to 10 scale
I = Number of injuries, illnesses, and deaths per each type
P = Total number of points from seven Employee Rating of Safety & Health questions given to all employees (part-time employees will have their points multiplied by same fraction used to calculate E, that is, the part-time worker's yearly hours as a fraction of the average full-time employee's yearly hours)
S = Average severity of each injury/illness type, as assigned subjectively from 0 to 100 by the CRB

Percentage of Workers Ranking: 20%

Data Needed:

- The death of any employee from a work-related incident or the in-patient hospitalization of three or more employees as a result of a work-related incident (self-reported to OSHA within eight hours of incident in accordance with the OSH Act)
- Listed work-related injuries and illnesses by company (forms 300, 300A, 301, which already must be filled out but would now be submitted to federal government at regular intervals)
- Employee list of any additional work-related illnesses and injuries (answered on addendum to the individual tax return form)
- Work-related illnesses, injuries, and deaths as diagnosed by any medical professional
- Employee Rating of Safety and Health questions (answered on addendum to the individual tax return form)
- Listed violations of all worker safety laws (documented by OSHA)
- Records of all corporate purchases (by item type, item quantity, and EID of company purchased from, if available; this includes all raw materials, commercially packaged materials, and services rendered)

How It Works: The better a company protects its workers' safety and health, the better it would do with the WS&H metric. That means preventing injuries, illnesses, deaths, harassment, and assault, as well as reducing stress, providing more healthful food and beverages, and giving more scheduling flexibility.

The first half of the Safety & Health metric ranks companies by the number of work-related injuries, illnesses, and deaths it has helped cause in the prior year. These ailments would be those reported by the business itself, by any physicians that see the employees as patients, and/or by the employees themselves. The fewer injuries, illnesses, and deaths per one hundred employees (and the less harmful the illnesses and injuries at that), the higher the CR Ranking.

The second half of the Safety & Health metric will rank a company by how well its employees rate its protection of their safety and health. Seven questions will be added to the Individual Tax Return that every working American fills out every year, each to be rated from 0 to 10:

- How well do you feel your company ensures your safety at the workplace, specifically in terms of providing proper housing and equipment?
- How well do you feel your company ensures your safety at the workplace, specifically in terms of keeping the workplace free of hazardous materials and chemicals?
- How well do you feel your company ensures your safety at the workplace, specifically in terms of preventing and punishing harassment and assault (sexual or otherwise)?
- If you work full-time (35 or more hours a week), to what extent would you say you are overworked (i.e. made to work more hours than you desire and/or have requested to work)?
- How well do you feel your employer provides healthful food and beverage options at work and/or makes it easy for you to provide such healthful options yourself? [13,31]
- To what extent does your employer give you the time off and scheduling flexibility to consistently take care of your family, health, and career development needs (all without punishing you for doing so)? This includes but is not limited to:
    - Child care
    - Caring for an ailing relative
    - Physical exercise
    - Mental health breaks
    - Pursuing a degree or other outside education
- How would you rate your average on-the-job stress levels?

As with all other CRR metrics, the average overall score per employee for each company with these seven questions will then be ranked relative to all other companies.

On top of those two measures, the CRB would also have the right to subjectively reduce (or increase) a company's Worker Safety & Health ranking based on that company's listed violations of safety standards, as provided by the Occupational Safety & Health Administration or any other applicable government agency.

Why We Need It: With the Worker Safety & Health metric, businesses would have good reason to work a lot harder to keep their employees safe, healthy, and happy.

That would first mean bringing up the safety standards of unsafe workplaces, mostly those overseas where regulations aren't as strict as they are here in the US (like the decrepit factory that collapsed in Bangladesh in 2013 and killed over a thousand people).

However, it would also mean getting companies everywhere to go far beyond the bare minimum that they now strive to merely pass. Despite the rules we currently have on the books for worker safety, businesses still regularly expose their workers to plenty of toxic chemicals. Employees regularly get injured and even die in preventable accidents. Our workforce is chronically overstressed.

Our inflexible work schedules tend not to allow enough time for physical exercise. That same scheduling inflexibility is also one of the leading reasons that women get paid less than men. All of these problems put quite an unnecessary burden on our workforce and drive up our already-out-of-control health care costs. The Worker Safety & Health metric would push businesses to not just pass local safety laws, but to go much further, to do everything they can to improve the safety and health of their employees.

For more on all of the positive change that the WS&H metric would bring, see Problems CRR Would Help Fix in the Why CRR page—more specifically the sections on National Health Care Bill; Gender Pay Gap; Cancer Rates; Workplace Harassment and Assault; Obesity Rates; and Workplace Illnesses, Injuries, and Deaths.

Carbon Footprint

The Metric: The amount each company contributes to global warming. More specifically, each company would be ranked by its carbon dioxide equivalent per one *service unit-dollar* (i.e. how much it warms the planet per one dollar's worth of product it creates for the world).

The Math: $\frac{SUD}{CDE}$

SUD = Service Unit Dollars = (Total service units sold) x (Universal mean price per service unit)
CDE = Carbon Dioxide Equivalent =

$$FG_FW_G + EG_EW_G\frac{P}{100} + LMW_M + fN_fW_N + DC_D + SlUgC_g + SlUE_PC_E$$

C_D = Carbon dioxide equivalent released per square mile of land destroyed, per ecosystem type
C_E = Tons of carbon dioxide equivalent released per one kilowatt of electricity in location of product sale (given breakdown of electricity sources there)
C_g = Tons of carbon dioxide released per one gallon of gasoline burned
D = Net destruction of all land, in square miles and by ecosystem type and location
E = Total yearly electricity consumed by company (in kilowatts)
E_p = Electricity consumption per hour of use per specific product (in kilowatts)
F = Amount of fuel directly burned, in kilograms and by fuel type
f = Tons of nitrogen fertilizer used
G_F = Tons of each greenhouse gas directly or indirectly produced per kilogram of fuel type burned
G_E = Tons of each greenhouse gas directly or indirectly produced per kilowatt of electricity produced, per type of electricity source (i.e. coal vs solar vs nuclear, etc)
g = Gasoline consumption per hour of use per specific device (in gallons)
L = Livestock owned, per type of animal
l = Estimated average product lifetime of all service units in that category (in years)

M = Tons of methane produced per year, per animal type
N_f = Tons of nitrous oxide produced per kilogram of nitrogen contained in fertilizer
P = Percentage of company's electricity coming from each type of energy source (i.e. coal vs solar vs nuclear, etc)
S = Service Units
U = Average usage per year of one item in that service unit category (in hours)
W_G = GWP of greenhouse gas in question
W_M = GWP of methane
W_N = GWP of nitrous oxide

*GWP is a gas's Global Warming Potential, which tells us roughly how much one ton of that gas warms the planet versus a ton of another gas. Carbon Dioxide has a GWP of 1 since it's the baseline unit that all others are compared to. Methane has a GWP of about 32. Nitrous oxide is about 281, etc. GWP numbers are always estimates, but CR rankings would be based on the best, most recent estimates (i.e. by default the IPCC's latest GWP estimates for a 100-year timespan).

The general formula for all of the Environment metrics is Service Unit-Dollars / Environmental Impact. In other words, the more environmental impact a company has per one dollar's worth of product it creates for the world, the lower its ranking will be. For a company's Carbon Footprint, that means the more tons of carbon dioxide it creates per one dollar's worth of computer it sells—or per one dollar's worth of bicycle, toothbrush, or whatever—the lower its Carbon Footprint ranking.

Carbon Dioxide Equivalent essentially means the total tons of carbon dioxide produced. The only difference with CDE is that all warming gases other than CO_2 (like methane or nitrous oxide) are also converted to how many tons of CO_2 would be needed to get the same warming effect and then added to the CDE total. The CDE formula thus equals a company's total global warming impact—from all fuel burned, electricity used, livestock kept, fertilizer used, forests cut down, and products used (i.e. the electricity and fuel consumption directly used by the products a company sells). So for Ford, that last part means its Carbon Footprint ranking accounts for the warming effects of not only the making one of its trucks but also the average amount of gasoline such a truck would use throughout its lifetime. The same goes for the electricity or battery use of, say, a vacuum cleaner, dishwasher, or any other power-using device.

Percentage of Environment Ranking: 40%

Data Needed:

- Records of all corporate sales (by item type, item quantity, item mass, materials of item plus packaging, locality of sale, price, and EID of company sold to, if available and applicable)
- Records of all corporate purchases (by item type, item quantity, and EID of company purchased from, if available; this includes all raw materials, commercially packaged materials, and services rendered)
- Records of all resources harvested directly from the land, air, and sea (by material type, quantity, and method of extraction; includes both living things and nonliving raw materials)

- Documentation of any destruction or alteration of land, sea (in all building projects and resource harvesting, etc, including but not limited to mining, logging, construction)
- Records of all materials chemically altered (by type and mass of each reactant and product)
- Documentation of any corporate time and/or money going to environmental conservation projects or research
- Total number of livestock owned (by type of animal and portion of year kept, if applicable)
- Total corporate electrical usage (in kilowatt-hours by source locations and fuel types)

How It Works: The Carbon Footprint metric measures each company's contribution to global warming. The more that company warms the planet, the worse its resulting CR Ranking. Given that the CF metric accounts for a whole 40% of a company's Environment ranking, a company that wants to raise its CR Ranking and thus attract more customers would then have great reason to do everything it can to lower its carbon footprint.

Why We Need It: Global warming is arguably the number one threat posed to the continuation of our species. Even if we humans do survive the warming of our planet, it will almost certainly be with increased flooding, drought, famine, loss of land, loss of biodiversity, destruction of coral reefs, and costlier and more damaging meteorological storms of all sorts. In addition to any direct human deaths caused by these effects of global warming, we will face trillions of dollars in housing and infrastructure damage in the coming decades, as well as the increased likelihood of war over scarcer food and water. With the Carbon Footprint metric, CR Rankings would provide a strong financial incentive for businesses to cut their carbon footprints as much as possible. CRR would thus spark a major change from the climate change status quo, and it would arguably do much more than any other human initiative thus far to curb the release of greenhouse gases and stop the warming of the planet.

For more on global warming and the impact CRR would have on it, see our more detailed discussion of the issue in Problems CRR Would Help Fix in the Why CRR page.

Non-Greenhouse Pollution

The Metric: The harm done by each company's production of air, water, and land pollution (in all ways except for warming the planet)

The Math: $\frac{SUD}{P_1H_1 + P_2H_2 \ldots}$

H = Harmfulness factor for each pollutant
P = Tons of each pollutant

In other words, this metric measures the weighted harm done per service unit-dollar by all non-greenhouse air, water, and land pollutants. The harm of each pollutant is calculated as the tons of said pollutant produced per service unit multiplied by the weighted *harmfulness factor*. A pollutant's harmfulness factor is a number which gives its relative harmfulness to the world as compared relatively to all other known pollutants. The CRB will create, manage, and regularly update a list with the HF of all known pollutants, giving a score of 100 to what is believe to be the most harmful then ranking all others subjectively from 0 to 100 accordingly. This list will be made using any and all available scientific knowledge of each pollutant for guidance.

Percentage of Environment Ranking: 30%

Data Needed:

- Records of all corporate sales (by item type, item quantity, item mass, materials of item plus packaging, locality of sale, price, and EID of company sold to, if available and applicable)
- Records of all corporate purchases (by item type, item quantity, and EID of company purchased from, if available; this includes all raw materials, commercially packaged materials, and services rendered)
- Records of all resources harvested directly from the land, air, and sea (by material type, quantity, and method of extraction; includes both living things and nonliving raw materials)
- Documentation of any destruction or alteration of land, sea (in all building projects and resource harvesting, etc, including but not limited to mining, logging, construction)
- Records of all materials chemically altered (by type and mass of each reactant and product)
- Estimates of pollutants from farm runoff (including nutrients, sediments, and pathogens, with estimates based on terrain, land use, buffers, and periodic water testing above and below runoff sources)

How It Works: The Non-Greenhouse Pollution metric ranks companies by how much they contribute to all other forms of air, water, and land pollution (outside of greenhouse gases). Such pollution includes sulfur and nitrogen compounds that lead to acid rain, CFCs that deplete the ozone layer, mercury and all other carcinogens that raise the risk of cancer, excess fertilizers that lead to freshwater eutrophication, excess antibiotics that help lead to antibiotic resistance, and any other chemical compounds produced by companies that can have a negative impact on the health of the environment in any way.

Why We Need It: Businesses create most of the world's pollution. That pollution worsens our health, raising rates of a wide swath of illnesses, from asthma to pneumonia to cancer. It also cripples the world's ecosystems and has driven scores of species to extinction. If all of that harm weren't bad enough in itself, pollution costs us trillions of dollars each year. The Non-Greenhouse Pollution metric, however, would push businesses to steadily produce less and less pollution. With CR Rankings, we could very likely see the biggest single reduction in the production of harmful chemicals in the history of humankind.

For more on what the Non-Greenhouse Pollution metric would accomplish, see Problems CRR Would Help Fix in The Plan page. More specifically, check out the sections on Antibiotic Resistance; Nuclear Waste; Cancer Rates; Outdoor Air Pollution; Cultural Eutrophication; Wetland Destruction; Mountaintop Removal; Acid Rain; Species Endangerment and Extinction; Accumulation of Plastic in the World's Oceans; Landfills; Workplace Injuries, Illnesses, and Deaths; and Toxic Chemical Ingestion.

Biodegradability and Recyclability

The Metric: The biodegradability and/or recyclability of a company's products and waste. The more biodegradable and/or recyclable the materials a company creates, the better it will do with this metric.

The Math: $$\frac{SUD}{\left[M - m\frac{n}{(n+1)}\right]\left[1 - \frac{n}{(n+1)}\frac{f}{100}\frac{c}{100}\frac{e}{5}\right]\left[\frac{t^2}{(t^2+500)}\right]}$$

The denominator portion of the formula should be run for each type of material produced, with result from each added up for the final denominator. (We would have more accurately shown this here with subscripts 1, 2, etc, but that would've made an already rather complex formula maddening to look at and comprehend.)

c = Percent consumer frequency of recycling material versus throwing it in trash (weighted average in localities of sales)
e = Ease of separating and recycling the recyclable parts of product/packaging (on 0-5 scale, to be decided subjectively for each product by CRB)
f = Percent of material sold in localities with both free municipal pickup of material and recycling facilities to process the material
M = Tons of material produced
m = Tons of material recycled directly by company
n = Average number of times material type can be successfully recycled before becoming trash
t = Time in years for material to biodegrade

The Biodegradability and Recyclability metric probably has the most tricky math of all the CRR metrics. As with the other Environment metrics, the general formula is Service Unit-Dollars / Environmental Impact.

Overall, that entire denominator combines together to form an estimate of the mass of unrecycled and non-biodegradable material produced. We get this by combining three parts: first, the mass of the material type in question that is not recycled directly by the company M – m[n/(n+1)] multiplied by, second, the average estimated percent of the remaining mass that will not end up being recycled by the consumer [1 – n/(n+1) x f/100 x c/100 x e/5] multiplied by, third, the unrecycled mass's

non-biodegradability factor [$t^2/(t^2+500)$] that is, by how much that material will not biodegrade. What we get afterwards is the estimated amount of material left over that will not be recycled or biodegrade. Each company is then ranked by how much such material is created per service unit-dollar (i.e. per amount of service provided to the world).

Percentage of Environment Ranking: 15%

Data Needed:

- Records of all corporate sales (by item type, item quantity, item mass, materials of item plus packaging, locality of sale, price, and EID of company sold to, if available and applicable)
- Records of all corporate purchases (by item type, item quantity, and EID of company purchased from, if available; this includes all raw materials, commercially packaged materials, and services rendered)
- Records of all materials chemically altered (by type and mass of each reactant and product)
- Quantity of all externally recycled materials (by type and mass)
- Recycling capabilities (by locality, globally)
- Average consumer recycling frequency per material type (by locality, globally)
- Rating of the ease of recyclability of all products sold in US (as decided subjectively by CRB based how easy it is to deconstruct and recycle the products themselves and their packaging)

How It Works: Simply put, the B&R Metric ranks companies by how biodegradable and recyclable their products and waste are. The more biodegradable and recyclable, the better. Really to be more specific, though, companies are directly ranked by how much non-biodegradable and unrecyclable stuff they create—that is by how much junk they create that will sit in a landfill somewhere and not go away. So that also means that simply creating *less stuff* raises the B&R ranking, too.

Why We Need It: One of the biggest environmental issues of our time is the accumulation of non-biodegradable, unrecycled waste. It clogs expensive, overflowing landfills. It is filling up the oceans with plastic. It makes a major contribution to climate change, magnifies the health hazards of toxins, and ensures that we waste more time, money, effort, and raw materials in making new things because we failed to adequately recycle the old ones.

The Biodegradability & Recyclability metric would push companies to make their products steadily more biodegradable and recyclable. This metric would, in other words, push companies to start caring not just about how much the consumer will like their product, but also about how their products will affect the world once they've been thrown out. The B&R metric would bring cleaner oceans, fewer landfills, more efficient use of waste, and less global warming.

To learn more about all of the good that the Biodegradability & Recyclability metric would do, see Problems CRR Would Help Fix in the Why CRR page. More specifically, take a look at the sections

on Species Endangerment and Extinction, Accumulation of Plastic in the World's Oceans, and Landfills.

Water Use

The Metric: How much water is used to produce a company's products and services

The Math: $\frac{SUD}{WS}$

S = Water scarcity factor
SUD = Service unit dollars
W = Total liters of water used

The Water Scarcity Factor is a number from one to five that the CRB would designate for all locations globally. The factor ranges from areas of the most plentiful water (1) to the greatest water scarcity (5).

Percentage of Environment Ranking: 15%

Data Needed:

- Records of all corporate sales (by item type, item quantity, item mass, materials of item plus packaging, locality of sale, price, and EID of company sold to, if available and applicable)
- Records of all corporate purchases (by item type, item quantity, and EID of company purchased from, if available; this includes all raw materials, commercially packaged materials, and services rendered)
- Total corporate water usage (by volume, from public-supply systems, private wells, and all other sources)

How It Works: With the Water Use metric, companies would be ranked by how much water they use. Pretty simple. The more water used to make any particular product or service, the lower the Water Use ranking.

The only added layer here is the Water Scarcity Factor. The more scarce water is where a business uses it, the more any water use will count towards that company's Water Use ranking. So, in other words, using one liter of water in the desert will count the same as using five liters in an area of plentiful water. That way, companies are incentivized to be extra careful with their water use in drier areas—and, really, to start moving more of their water-intensive activities to wetter areas.

Why We Need It: Water scarcity drives food price hikes, thirst, malnutrition, and diseases of poverty around the world. As billions more people come to occupy Earth in the coming decades, water scarcity is only poised to get much worse. With the Water Use metric, though, CR Rankings would encourage businesses—users of most of the world's freshwater—to start using a lot less.

Agriculture and industry alone account for 88% of all global water use,[3] and yet quite a lot of that water gets wasted. An estimated 60-70% of water used by farms, for example, never even makes it to the crops thanks to issues like leaky irrigation channels, evaporation, and water inefficiently draining straight into rivers.[4,5] CRR's Water Use metric would push businesses to use less water and to then be more efficient with the water they do use.

For more on the ways the Water Use metric would positively affect the world, check out the Water Scarcity section of Problems CRR Would Help Fix in the Why CRR page.

Shouldering the Tax Burden

The Metric: How much a company *actually pays* in taxes compared to the tax rate it *should be paying*. So that means each company is ranked by the ratio of its effective tax rate paid versus the actual corporate tax rate where a.) the company's employees work and b.) where the company sells its services and/or products.

The Math:

$$\frac{\left[\frac{T}{e_1R_{E1} + e_2R_{E2} + \ldots} + \frac{T}{s_1R_{S1} + s_2R_{S2} + \ldots}\right]}{2}$$

e = Percent of total employees working in each locality
R_E = Total corporate tax rate in each locality where employee(s) work
R_S = Total corporate tax rate in each locality where products/services have been sold
s = Percent of total sales completed in each locality
T = Total corporate taxes paid

Percentage of Community Ranking: 40%

Data Needed:

- Net corporate revenue after all returns and allowances (collected by the IRS with forms 1120 and 1120S)
- Total corporate taxes paid (collected by the IRS with forms 1120 and 1120S)
- Employment location zip code of each employee (collected by the IRS with forms W-2, 1040)
- Records of all corporate sales (by item type, item quantity, item mass, materials of item plus packaging, locality of sale, price, and EID of company sold to, if available and applicable)
- Records of all corporate purchases (by item type, item quantity, and EID of company purchased from, if available; this includes all raw materials, commercially packaged materials, and services rendered)

How It Works: The Shouldering the Tax Burden metric assesses to what degree a company pays its taxes versus avoiding them. The more the company pays in taxes versus the actual tax rate where it works and sells its products and services, the higher it will rank with this metric.

To calculate this metric, we first assess a company's effective tax rate, or in other words what percentage of its income did it pay in taxes to various applicable governments. This percentage would then be compared to the actual average tax rate, first, where the company's employees work and, second, where it sells its products and services. So a company with an actual tax rate of 25% that pays the full 25% would do well here. On the other hand, a company that hides its money in tax havens overseas to avoid paying what it should will rank quite poorly in this metric.

Why We Need It: As much as we all love to demonize taxes, we absolutely need them. Taxes pay for all of the vital services we take for granted—roads, schools, police, airports, social security, firefighters, hospitals, the military, and on and on. Businesses enjoy the benefits of all of those government services just as much as individuals do, but they've become adept at avoiding their fair share of the taxes that pay for those services. Corporate tax avoidance amounts to roughly $100 billion lost here in the US every year.[6] Such tax avoidance leads to government deficits, reductions in government services, and higher tax bills for the rest of us. The Shouldering the Tax Burden metric would motivate businesses to avoid the tax avoidance game and pay what they rightly owe.

To read more about what the STTB metric would do for our communities, see Problems CRR Would Help Fix on the Why CRR page. More specifically, check out the sections titled Corporate Tax Avoidance and National Deficit and Debt.

Charitable Giving

The Metric: Percent of total yearly revenue given to charitable organizations

The Math: $\frac{D}{R}$

D = Total donations to charitable organizations (in money, goods, and services)
R = Total yearly revenue

Percentage of Community Ranking: 40%

Data Needed:

- Net corporate revenue after all returns and allowances (collected by the IRS with forms 1120 and 1120S)
- Total corporate charitable contributions (collected by the IRS with forms 1120, 1120S, 8283)
- Records of all corporate purchases (by item type, item quantity, and EID of company purchased from, if available; this includes all raw materials, commercially packaged materials, and services rendered)

How It Works: The Charitable Giving metric would rank companies by how much they give to charity. The higher the percentage of a company's revenue it donates, the higher the CR Ranking.

Donations would obviously include money, but also goods and services. If a grocery store wants to donate excess bread to a food bank or a consulting firm wants to donate its consulting expertise to a non-profit, great! The world should benefit just as much from these donations as from direct cash.

Why We Need It: Take a look at most any charitable cause and you'll find a recurring situation: with more money it could be doing so much more. More houses could be built for the poor. More clothing and food could be given to hurricane victims. More arts programs, more medical research, more support for veterans, you name it. With the CG metric, CR Rankings would give companies a strong incentive to do much more to fund all of these great causes.

Upon hearing of the need for more charitable funding, though, most people lament that we citizens should be giving more. Well, perhaps we should, but we actually on average already give over 5% of our income to charity.[7,8,9] US corporations, on the other hand, made over eight trillion dollars in profits in 2015 but only gave a tiny sliver of those profits (0.98%) to charity.[10,11,12] Arguably corporations should keep the majority of those profits, to invest in new products, research, etc. But just *0.98%*?! For a lot that loves to brag in cheesy commercials about how profoundly giving they all are, that's abysmal.

With the Charitable Giving metric, CR Rankings would encourage companies to give more, to compete to see which company could give the largest percentage of its profits to charity. Most companies can clearly afford to give more, and with this push from the CG metric we could eventually see a doubling, tripling, or even bigger increase in the amount of money given to charities each year. That's a huge boost for innumerable great causes.

For more on the good that the Charitable Giving metric would do, see Problems CRR Would Help Fix in the Why CRR page. More specifically, check out the sections on Food Waste, Charitable Giving, Cancer Rates, and Landfills.

Job Location Stability

The Metric: What percent of a company's jobs have stayed put in the same place in recent years

The Math: $$\frac{\left[\left(1-\frac{E}{M_5}\right)+\left(1-\frac{E}{M_{10}}\right)+\left(1-\frac{E}{M_{15}}\right)\right]}{3}$$

E = Total number of full-time employment positions filled at company in question (with each part-time employee counting as a fraction of one full-time employee relative to how many hours were worked during the year)

M_5 = Number of employment positions that have been terminated or relocated at least twenty miles away in the past *five* years

M_{10} = Number of employment positions that have been terminated or relocated at least twenty miles away in the past *ten* years
M_{15} = Number of employment positions that have been terminated or relocated at least twenty miles away in the past *fifteen* years

As is the case with all other metrics, the higher the number that comes out, the higher the ranking. Ranking companies by how many jobs are terminated or moved, though, would initially give out rankings in the opposite order. Thus to flip the numbers, we subtract each of those numbers from one (just like we do with the Distribution of Wealth metric). We then add all three of the resulting numbers and divide by three to get the average.

Percentage of Community Ranking: 20%

Data Needed:

- Employment location zip code of each employee (collected by the IRS with forms W-2, 1040)
- List of all new, eliminated, and transferred job positions
- Records of all corporate purchases (by item type, item quantity, and EID of company purchased from, if available; this includes all raw materials, commercially packaged materials, and services rendered)

How It Works: The Job Location Stability metric ranks companies by how much they keep their jobs set where they already are—that is, instead of zig-zagging them to new locations all around the world each year.

So if your offices and factories have stayed put in the same places for decades, then you will rank well with the JLS metric. Move your jobs to different states or countries every time you hear of some slightly cheaper tax rate, then you won't do so well. More specifically the JLS metric would rank companies by the percentage of employee positions eliminated or relocated at least twenty miles away from the previous location in the last five years, ten years, and fifteen years.

Why We Need It: With the Job Location Stability metric, communities could gain back a stability that has been steadily lost thanks to globalization.

So much of what makes for a strong community is stable, reliable jobs. Such jobs allow a community's workers to have a sense of security and to work their way up in the world without having to uproot and cut ties with friends and family if they don't want to do so. The more companies globalize, though, the more easily they can move their jobs around according to whatever the slight economic benefit of the week is. While that job movement might make the company a bit more money, it can wreak havoc on our communities. When a factory or office division shutters its doors to go somewhere else, it often leaves that town to suffer higher unemployment, a decreasing population, and a bevy of psychological disorders like depression and opioid addiction. Corporations will inevitably have to end some job positions and move others, but this metric encourages them to only do so when it is truly necessary.

For more on the problems the Job Location Stability metric would help fix, see Companies Abandoning Communities in the Problems CRR Would Help Fix page.

Additional Factors

The Metric: Any additional factors outside of the other CRR Metrics that the CR Bureau decides should lower or raise a company's rankings

The Math: (There is no set math for the Additional Factors metric. Points would be added or subtracted directly from a company's CR Rankings.)

Percentage of Community Ranking: —

Data Needed:

- Total hours worked by each employee (also newly including employee's age, gender, and race/ethnicity) (FLSA required wage records now to be submitted as part of each employee's W-2 form)
- Total wages given to each employee in all forms of compensation (collected by the IRS with forms 1040, W-2, and 1099 MISC from individuals; and forms W-2, W-3, 1120, and 1120S from businesses)
- Listed violations of all worker safety laws (documented by OSHA)
- Employee gender and race/ethnicity (on individual tax return form)
- All lawsuits and complaints filed with all state and federal governments against each company (submitted to the IRS, EPA, OSHA, and all other local, state, and federal government agencies)
- Complaints and/or evidence of wrongdoing filed directly to the CRB
- Documentation of any destruction or alteration of land, sea (in all building projects and resource harvesting, etc, including but not limited to mining, logging, construction)
- Documentation of any corporate time and/or money going to environmental conservation projects or research
- Documentation of any new technologies discovered and/or new products created that could qualify for innovation points
- Records of all corporate purchases (by item type, item quantity, and EID of company purchased from, if available; this includes all raw materials, commercially packaged materials, and services rendered)

How It Works: The CR Bureau reserves the right to subjectively lower or raise any company's CR Rankings any amount for any additional factors outside of the scope of the other metrics. The only stipulation is that any additional factors used to rank any company would be explained to the public.

Such additional factors include but are not limited to:

Workers

- Discrimination in hiring, firing, or pay (i.e. on the basis of gender, race, religion, sexual orientation, age, or national origin)

- Not delivering on any promised payments or misleading workers about the nature of any such payments (e.g. health care options, pensions, overtime pay, severance pay, maternity pay, stock options, etc)
- Violation of local child labor laws and/or exceeding basic guidelines on child labor set forth by the International Labor Organization
- Evidence of sexual harassment and/or assault that goes beyond what the Worker Safety & Health score reflects, including specific claims of harassment and/or assault reported by individuals directly to the CRB

Environment

- Doing irreparable damage to the environment, in solitary or continued acts that are above and beyond that of normal pollution (e.g. mountaintop removal, rainforest destruction, wetland destruction, oil spills, any other actions contributing to species endangerment or extinction, etc)
- Pollution that more directly endangers human health than usual (e.g. the release of toxic chemicals directly into waterways and/or in the near proximity of homes or workplaces)
- Positive projects that help mitigate or undo environmental damage done (e.g. carbon sinks, wetland restoration, land conservation, donation to alternative energy research, etc)
- Invention of new technologies that lead to greater environmental sustainability beyond the company's direct reach

Community

- Injuries, sickness, or other direct harm done to consumers by the company's products or services
- Development of new vaccines, drugs, and other treatments for diseases of poverty

In general, as well, these additional factors include any company's attempt to subvert the government's collection of data to construct these Corporate Responsibility Rankings

Why We Need It: Within a system like CR Rankings, it is inevitable that some ways a company can be responsible or irresponsible will not fit neatly into one of the other metrics. The Additional Factors metric allows for all such extra actions to still be factored into company's rankings.

In other words, this metric handles all corporate behavior that isn't *quantifiable* and/or *universal.* As mentioned above, to work as one of the main metrics for CR rankings, a measure of irresponsibility must be both quantifiable and universal. That is, such a metric must be measurable with objective data and must apply to most if not all companies.

For instance, pretty much every business pollutes, pays taxes, uses water, etc. Furthermore, such actions are measurable with objective data. Each company generates a specific number of tons of each pollutant. Each company pays a certain number of dollars in taxes. Each company uses a

certain number of gallons of water. A company could always try to illegally fudge the facts a bit with such metrics and might even get away with it every once in a while, sure, but ultimately what matters most is that we can actually get objective, rather accurate measurements that apply to pretty much all companies.

However, there will inevitably be other important factors of responsibility that that don't quite fit those two basic requirements of being both quantifiable and universal. For example, consider an oil spill like the Exxon Valdez catastrophe of '89 or the more recent Deepwater Horizon oil rig explosion in the Gulf of Mexico. Such oil spills caused massive environmental damage to the ecosystems involved, and the perpetrating companies should rightly deserve to have their rankings docked in such situations (had CR Rankings existed at the time). The problem, though, is that any attempt to quantify the damage done would be, at best, awkward and inevitably rather inaccurate. The simplest task of all, assessing the number of gallons of oil spilt into the gulf in the more recent spill, proved hardly simple at all. At the time, British Petroleum estimated 1,000-5,000 barrels of oil were gushing out a day.[13] The Flow Rate Technical Group, on the other hand, estimated a quite different 62,000 barrels a day.[14]

In addition to not being easily quantifiable, oil spills also fail the other main requirement of a standalone metric: being universal. How many other companies have been involved in oil spills? Almost none. This is an important distinction because CR Rankings work by being *relative*. Each company is compared to all others with each factor of corporate responsibility. How much carbon dioxide does it create compare to all other companies. How well does it pay its workers compared to all other companies. You cannot rank companies relatively, though, with a factor that only applies to a random few companies and no others. It would make little sense, in other words, to create an Oil Spill metric where 99.9% of companies get perfect 10's, with Exxon-Valdez and BP put down in timeout at the bottom with 0's. What good would that do? The same goes for many other instances of corporate irresponsibility that are clearly bad but are hardly universal and, therefore, very hard to include in data-driven comparisons: mountaintop removal, child labor, human trafficking, wetland destruction, etc. As such, the Additional Factors metric will add or subtract points from any company's rankings for all such factors beyond the scope of CRR's other metrics.

One key way companies could boost their CR Rankings with the AF metric would be *innovation points*. Any company that makes discoveries that would help the world at large (beyond the good derived from its own direct actions) would be rewarded with innovation points. Those points would then translate to higher CR Rankings. New green energy technologies and new treatments for diseases of poverty, for example, would garner high innovation points. Note that this isn't the same as just buying new, more energy-efficient truck engines and using them in your shipping fleet. If you *design* that more energy-efficient engine, though, then your design will go to carbon reductions among shipping companies that use your new type of engine all around the world, and thus your company would earn innovation points. For more on innovation points, see the Additional Notes section below.

For more on what the Additional Factors metric can accomplish overall, check out Problems CRR Would Help Fix in the Why CRR page. More specifically check out the sections on Global Warming, Rainforest Destruction, Diseases of Poverty, Gender Pay Gap, Racial Pay Gap, Antibiotic Resistance, Child Labor, Wetland Destruction, Mountaintop Removal, and Species Endangerment and Extinction

Data Needed

The key to effectively running a system like CRR is the data. This information allows CRR to assess the responsibility of various companies in a fair, objective, and comprehensive manner.

Should CR Rankings be enacted law, the federal government would take this information from businesses, employees, and researched statistics. It would do so regularly—collecting it quarterly from businesses, yearly otherwise (specifically data points 23-44). See below for all of the specific data that would be collected.

While we have set up this data structure to be as comprehensive as possible, we have also taken great pains to structure it to be as easy for companies to report as possible. Much of the data CRR needs is information that businesses already report to the government. The rest mostly consists of what each business buys and sells. That is information any responsible business should be keeping track of.

These two goals—comprehensive yet simple—should always dictate what data should be collected and how it be collected for CRR. Over time, should the CR Bureau find that there are aspects of the behind-the-scenes behavior of companies that isn't currently being reflected in CR Rankings, then it should add more data to be collected. If it finds that any of the information being collected is redundant, obsolete, or too onerous for businesses, then the Bureau should delete or consolidate certain data elements.

Data already reported to the government:

1. Net corporate revenue after all returns and allowances (collected by the IRS with forms 1120 and 1120S)
2. Total corporate taxes paid (collected by the IRS with forms 1120 and 1120S)
3. Total corporate charitable contributions (collected by the IRS with forms 1120, 1120S, 8283)
4. Total wages given to each employee in all forms of compensation (collected by the IRS with forms 1040, W-2, and 1099 MISC from individuals; and forms W-2, W-3, 1120, and 1120S from businesses)
5. Employment location zip code of each employee (collected by the IRS with forms W-2, 1040)
6. Listed violations of all worker safety laws (documented by OSHA)
7. All lawsuits and complaints filed with all state and federal governments against each company (submitted to the IRS, EPA, OSHA, and all other local, state, and federal government agencies)
8. The death of any employee from a work-related incident or the in-patient hospitalization of three or more employees as a result of a work-related incident (self-reported to OSHA within eight hours of incident in accordance with the OSH Act)

Data already recorded by companies but would now also be reported to government:

9. Total hours worked by each employee (also newly including employee's age, gender, and race/ethnicity) (FLSA required wage records now to be submitted as part of each employee's W-2 form)
10. Listed work-related injuries and illnesses by company (forms 300, 300A, 301, which already must be filled out but would now be submitted to federal government at regular intervals)

New data to be reported by businesses:

11. Records of all corporate sales (by item type, item quantity, item mass, materials of item plus packaging, locality of sale, price, and EID of company sold to, if available and applicable)

12. Records of all corporate purchases (by item type, item quantity, and EID of company purchased from, if available; this includes all raw materials, commercially packaged materials, and services rendered)
13. Records of all resources harvested directly from the land, air, and sea (by material type, quantity, method of extraction, and location; includes both living things and nonliving raw materials)
14. Documentation of any destruction or alteration of land, sea (in all building projects and resource harvesting, etc, including but not limited to mining, logging, construction)
15. Records of all materials chemically altered (by type and mass of each reactant and product)
16. Quantity of all externally recycled materials (by type and mass)
17. Total number of livestock owned (by type of animal and portion of year kept, if applicable)
18. List of all new, eliminated, and transferred job positions
19. Documentation of any corporate time and/or money going to environmental conservation projects or research
20. Documentation of any new technologies discovered and/or new products created that could qualify for innovation points

New data to be collected by the government:

21. Total corporate electrical usage (in kilowatt-hours by source locations and fuel types)
22. Total corporate water usage (by volume, from public-supply systems, private wells, and all other sources)
23. Recycling capabilities (by locality, globally)
24. Average consumer recycling frequency per material type (by locality, globally)
25. Rating of the ease of recyclability of all products sold in US (as decided subjectively by CRB based how easy it is to deconstruct and recycle the products themselves and their packaging)
26. Estimates of pollutants from farm runoff (including nutrients, sediments, and pathogens, with estimates based on terrain, land use, buffers, and periodic water testing above and below runoff sources)
27. Median yearly housing costs (by locality, globally)
28. Median yearly utility costs (electricity, heat, water, gas, internet) (by locality, globally)
29. Median yearly food costs (by locality, globally)
30. Median yearly transportation costs (by locality, globally)
31. Median yearly health care costs (by locality, globally)
32. Lowest cost for safe basic housing (by locality, globally)
33. Lowest cost for clean water access (by locality, globally)
34. Lowest cost for sanitary waste disposal (by locality, globally)
35. Lowest cost for fulfillment of basic caloric needs (by locality, globally)
36. Lowest cost for K-12 education (by locality, globally)
37. Lowest cost for reliable internet access (by locality, globally)
38. Employee gender and race/ethnicity (on individual tax return form)
39. Employee verification of total yearly hours worked (on individual tax return form)
40. Employee indication of whether part-time work was or was not by choice (on individual tax return form)
41. Employee Rating of Safety and Health questions (answered on addendum to the individual tax return form)
42. Employee list of any additional work-related illnesses and injuries (answered on addendum to the individual tax return form)
43. Work-related illnesses, injuries, and deaths as diagnosed by any medical professional
44. Complaints and/or evidence of wrongdoing filed directly to the CRB

Additional Notes

Branching

One of the trickiest aspects of assessing a company's level of responsibility is that no company is an island. In order to do business as usual, any company needs a steady influx of materials and services from other companies. A financial office needs paper to print on, power to run its lights, janitors to clean the floors, etc. Since these materials and services are an essential part of making a business's end products, it is only fair that these materials and services factor into that business's responsibility rankings. This is what we call *branching*.

With branching, when a company takes in products and services from other companies, it also absorbs at least some of these other companies' *responsibility data* (RD – e.g. their worker pay, tons of pollutants created, etc). Let's look at Jim's Janitors, which cleans up at Claire's Coffee Shop. Part of the pay for Jim's janitors, the chemicals used to clean the floors, the amount of taxes Jim pays, etc, will all become a part of Claire's rankings. Since Jim's Janitors also cleans the floors and windows of forty other businesses too, though, it wouldn't be fair to take *all* of Jim's RD and factor it into Claire's scores. Thus, *the percentage of RD absorbed by any company A will always be equal to the percentage of company B's total products and/or services that A is taking in*. So for calculating Claire's rankings, that means if 7% of Jim's yearly billable man-hours are spent cleaning Claire's coffee shop, then Claire's business will absorb 7% of Jim's RD.

Of course, to fully measure the environmental impact of those clean floors, we really must go deeper. What if, for example, Jim only uses mops made from old growth trees grown in rainforests. This biologically destructive purchasing habit means that by employing Jim, you're encouraging (if only a small bit) the destruction of rainforests. Part of the simple beauty of branching, then, is that it keeps going back all the way to the source. Claire's Coffee Shop absorbs part of Jim's RD, but that's only after Jim's Janitors has absorbed part of the RD of, say, Mark's Mops, who before that had already absorbed part of the RD of Rainforest Razers, the logging company that chops down those old growth trees. Thus, the CR Rankings of any one company include all of the hidden actors that contribute to that company's final products, including the small bit of rainforest cut down thanks to Claire's Coffee shop.

Such a seemingly tedious process might sound like worthless nitpicking at small potatoes, but every little bit matters. Those mops really are a small part of the effect of the espresso someone buys at Claire's, so each caffeinated consumer should know what she's supporting. Plus, since Jim's CR rankings would drop thanks to those mops, he would be motivated to find different mops to buy. Losing such valuable mop customers would likely then also motivate Mark to find more sustainable wood sources, either helping to put Rainforest Razers out of business or convincing them, too, to find a more environmentally friendly way to do business.

What's more, keep in mind that branching would quite often deal with much larger branches, such as the mops used in every Wal-Mart, or the manufacturers constructing every iPhone, or the shipping companies delivering all of Amazon's products. Each seemingly small potato adds up to something quite big. Branching would give all companies, both big and small, an incentive to care about the responsibility of such hidden parts of their businesses, an incentive that should collectively make a huge impact on all facets of corporate responsibility.

Two-Way Branching

While branching would often be one-directional, it would also at times go two ways. When it came to Jim's Janitors, for example, they provided a service to Claire's Coffee Shop, and therefore made up part of the behind-the-scenes work needed to create Claire's products. Claire's business gave no service to Jim's Janitors, though (unless Jim were to start stocking Claire's coffee to pep up his janitors every day). Thus, Claire's CR rankings absorbed some of Jim's RD but not the other way around.

Sometimes, though, responsibility data would be shared in both directions, such as with a cereal company and a grocery store that sells that cereal. Just like the farmers harvesting the cereal's grains, the store is an essential part of the cereal's life cycle. Without the store, the cereal would never make it into anyone's kitchen cabinet. On the flip side, though, the cereal (just like all other products the store sells) is a crucial part of the store. Without products to sell, a store would simply have nothing to offer. Therefore, each of the two companies would take some of the RD of the other in the same manner as stated before. If the cereal company's products make up 2% of the grocery store chain's yearly sales, then the cereal company would absorb 2% of the grocery store chain's yearly RD. At the same time, if that grocery store chain sells 17% of the cereal company's products for that year, then the grocery store chain would absorb 17% of the cereal company's yearly RD.

The only catch with two-way branching is that anytime a company is absorbing RD, it would not absorb any redundant RD—that is *it would not reabsorb its own data*. Remember, for example, that the grocery store absorbs 17% of the cereal company's RD. Remember also, though, that the cereal company as well absorbs 2% of the grocery store's RD. So when the grocery store takes in the 17%, it could accidentally reabsorb part of its own data that was already factored into the RD of the cereal company. This kind of reabsorption, of course, would make no sense. It would turn into an endless feedback loop and distort the accuracy of CR Rankings. To avoid this scenario, whenever company A is absorbing RD from company B, any parts within company B's RD that A has already absorbed will be considered redundant and blocked from reabsorption.

Corporate Responsibility Bureau

To effectively run the CR Rankings system, the government would need to establish a new, largely independent organization with centralized control over the rankings. While the exact naming and

placement within the government are arguably not too important to us, we here recommend the Corporate Responsibility Bureau (CRB). The CRB would:

- Collect all data needed for CR Rankings (with coordination from other government agencies like the IRS, OSHA, and EPA)
- Calculate all rankings
- Distribute rankings and labels to all applicable companies
- Enforce the posting of rankings on all applicable products and storefronts
- Publish a detailed account of all factors that went into the rankings of every company on a CRB maintained website
- Investigate and prosecute cases of rankings fraud
- Review and update data and metric setup as needed, so long as any changes are made public at least six months before taking effect

The CRB Board would be comprised of fifteen directors, each of whom would be voted into office by CRB Voting Members. Five directors would be voted in by voting members from each of three backgrounds, Workers, Environment, and Community. Those fifteen directors would then elect a president. Directors and presidents would serve six-year single terms, with no reelection.

CRB Voting Member status would be granted to any applicant who has worked in some capacity toward bettering corporate responsibility and/or bettering the world for our workers, environment, and communities for at least five years. Exact qualifications are subject to change (as to be decided by the CRB Board). However, such individuals shall include but not be limited to a(n):

<u>Workers</u>

- Employee at any government agency that protects the rights and treatment of employees, such as the US Department of Labor
- Member at any approved labor organization, such as the AFL-CIO, the National Education Association, the Service Employees International Union, etc.
- Individual who otherwise actively works in some capacity to further the interests of employee protection and good treatment, be it for fair pay, safe workplaces, anti-discriminatory hiring, etc

<u>Environment</u>

- Member of the National Academy of the Sciences
- Employee at the Environmental Protection Agency
- Individual who otherwise actively works in some capacity in the environmental sciences or to further environmental protection

<u>Community</u>

- Employees at and/or members of charitable non-profit organizations with no political or religious affiliations
- Individual who otherwise actively works in some capacity to better the local community

Note that, while Congress could always pass laws that alter CRR, absent any such laws the CR Bureau would otherwise run and alter the CR Rankings program as it sees fit. CR Rankings would thus have the flexibility to deftly change as needed over time—to update its list of pollutants as new ones are created or discovered, to alter the data collection process to make it as comprehensive yet business-friendly as possible, to change the rules to eliminate any unfair loopholes discovered by certain businesses, etc.

Shadow Rankings

In addition to the rankings tabulated for each of CRR's metrics (Distribution of Wealth, Carbon Footprint, etc), the system would also tabulate certain other *shadow rankings* that would not automatically count into a company's official CR Rankings. This would be done for rankings that are useful in determining corporate irresponsibility (and thus for assessing any reason to lower rankings for Additional Factors metrics) but which, if made into full metrics themselves, would arguably create perverse incentives.

While shadow rankings could be much more extensive in the future, we currently include such rankings for:

- Pay distribution by gender
- Pay distribution by race/ethnicity
- Pay raises by gender
- Pay raises by race/ethnicity
- Raises and firings for employees that report more work-related illnesses and injuries

To better understand shadow rankings, let's look at gender pay. Because of the long history of pay discrimination in favor of men, gender pay and gender pay raise rankings would all be published and updated regularly online for all to see and would then give an unbiased, data-driven look at how companies fall in the spectrum in terms of pay equity. Using such rankings, the CR Bureau would then be able to much more reliably assess complaints of gender pay discrimination against specific companies and dock their Worker rankings accordingly with the Workers Additional Factors metric.

Of course, this begs the question: why not just make gender pay equity its own full, automatically calculated metric? Why do this as a shadow ranking and only take away points from certain companies? These are quite fair questions. A gender pay metric would no doubt be a perfectly just metric to have, given that wage discrimination is a very real and pressing issue of corporate irresponsibility, one that CR rankings should absolutely reflect and combat. At the same time, though, such a metric would unfortunately be very likely to create perverse incentives. For example, if such a metric ranked companies by average pay to each female employee, it would then reward companies that promoted and/or raised the pay of their female employees. However, it would also

reward companies that do things like stop hiring new female workers. Why? Well, entry-level workers are generally paid much less than the average worker. Hiring new ones brings down the average pay of women overall. By the same financial logic, hiring more new entry-level men would also make the company seem more pay balanced. This could very likely drive down overall employment of women, an outcome that is obviously not the intent of such a metric and would therefore undermine its effectiveness and create a new, potentially worse problem.

If the metric instead just measured the total money paid to women versus the total amount paid to men, then a company could just hire 60% women but still give them lower-level jobs and pay them less each. Sound unrealistic? Well, look at the garment manufacturing and health care industries. Each is overall dominated by women, but the women are more skewed toward the lower-paying jobs like sewers and nurses, not higher-end jobs like managers, owners, and doctors. These industries would (inaccurately) look like models of pay equity with such a gender pay metric, though. Furthermore, such an automatic metric wouldn't be able to take into account valid reasons that certain businesses might appear, based on the data alone, to be unfair to women. A family-owned restaurant might happen to be male-dominated simply because the members of the family happen to mostly be male. (A family-owned restaurant could also rank just as low because the family is made of mostly women.) In addition, a particular industry might not have many women because women have chosen not to apply there. The logging industry, for instance, has only 3.2% women,[15] but is that because of discrimination or because few women find logging to be an attractive career path?

In other words, pay discrimination is, as far as we can tell, a hard issue to objectively rank with a data-based algorithm. The issue is better assessed with specific investigations into each company. That being said, though, shadow rankings would provide an invaluable tool to speed up such investigations and make them much more reliable and credible. When the CR Bureau receives plenty of complaints about the sexist lack of raises for women at Terry's Textiles, the CRB can instantly access TT's rankings. If the company does in fact rank low in these shadow rankings (i.e. it does pay its women poorly and gives them fewer raises than most other companies), then the CRB could then easily dock TT's rankings.

Service Units

The *service unit* is a basic measure of what each company provides to the consumer. For food that means one kilogram of food sold. For energy that means one kilowatt-hour. For real estate that means housing for one person. Service units are essential to how CRR would calculate its Environment rankings. Without them, it would be quite tough to adequately assess the environmental impact of one company versus another.

Imagine, for example, comparing the carbon footprint of two oil companies. Our first instinct might be to compare the two companies by the total metric tons of carbon dioxide each company produces. Whichever company produces more tons of CO_2 gets the lower ranking. Simple yet effective. Right? The problem here is the size of each company. One company may produce ten

times as much CO_2, but only because it's ten times as big as the other company. It is no more environmentally unfriendly, but it would unfairly get a much lower Environment ranking. The second, almost-as-simple approach we would likely be tempted to use next to compare companies is by their environmental impact *per overall revenue*. This would at first seem to work relatively well. If that much bigger oil company makes ten times as much CO_2, then we would divide its CO_2 produced by its ten-times-as-high revenue. That would even it out compared to the much smaller company that divides by a much smaller revenue. We're now much closer to a fair comparison, but the numbers would still be warped because this system would reward companies that charge more for the same service. Simply by doubling its price a company could greatly increase its Environment ranking, all without actually treating the environment any better. That doesn't make any sense.

To best assess how well a company treats the environment, what we really want to compare is environmental impact *per service provided to the consumer*. This is really what we all already intuitively search for when we want to make such comparisons in our daily lives. If I want the more environmentally-friendly air conditioner, I want to know which one will use less electricity and fewer harmful chemicals *per cooling of one house*. I don't care if the company uses more chemicals overall simply because it sells more AC units—I care how this one AC unit compares to another AC unit that I might buy. The same goes for those oil companies. What we really want is to compare the environmental impact of a gallon of gasoline from each company. In terms of calculating CR Rankings, this is where service units become quite necessary. Dividing a company's environmental impact by the number of service units it sells gives us a much fairer, more accurate way of comparing how environmentally-friendly different companies are.

Part of creating CR Rankings would thus be creating and managing a comprehensive list of service units. When businesses report how much of each product it has sold each quarter, it would do so in terms of service units. A sample list of basic service units is listed below:

- Goods
    - Raw materials: one kilogram
    - Food: one kilogram
    - Beverages: one liter
    - Electronics: one device
    - Computer software: one program or application
    - Textiles (clothing, bedding, curtains, etc): one square foot
    - Transportation sales (e.g. cars or bicycles sold): number of vehicles sold multiplied by average number of passengers found to use vehicle of that type
    - Real Estate (sales): housing for one person
    - Energy: one kilowatt-hour

- Services
    - Shipping: one kg shipped one mile
    - Transportation service (e.g. commercial planes, trains, and busses): one person taken one mile

- Medical Care: one short-term ailment treated, or one long-term ailment treated for one year
- Finance:
  - One financial transaction facilitated (includes one money transfer, one ATM withdrawal or deposit, one check deposited or cashed, or any other transactions done at the behest of the customer; does not include any transactions done at the behest of the company, such as stock trades)
  - One dollar loaned for one year
- Real Estate (rental): housing for one person for one year
- Cleaning: one square foot cleaned once
- Food and Beverage Services: one person served
- General services: one person served

This list of service units is a sample, as the entire list would be long and comprehensive, made to include all types of products and services legally sold within the country. The CR Bureau would be free to create, modify, or eliminate any service unit designations over time so long as the goal is always to more accurately and fairly compare the environmental impact of different companies.

One other very important note to make on the designation of different service units is that to achieve such accurate and fair comparisons, each service unit the CRB creates should focus on the consumer's *use* of the good or service (i.e. the *ends*), not each business's varying methods of delivering that good or service (i.e. the *means*). So if a person's use of transportation is to get from point A to point B, we should therefore use the same transportation service unit of *one person taken one mile* regardless of whether it was a bus, plane, car, or bicycle used to get that person there. It might be tempting to create separate service units for cars and trains, for example, but that might unfairly reward the less environmentally friendly of the two (presumably cars). If cars were only ranked against other cars, not against more environmentally friendly transportation methods, a taxi company with the best gas mileage compared to other taxi companies could get a great Environment ranking. Meanwhile a bus company with a slightly lower gas mileage than other buses around would then get a low CR Environment ranking, even though taking that bus would surely have a lower carbon footprint than taking the best of the taxis. See the conflict there? The rankings would be backwards, all because we too narrowly defined each service unit type. So long as we define service units by the consumer's *use* of goods and services, though, we should generally avoid that kind of conflict.

All in all, this is one of the trickiest aspects of creating CR Rankings, and one that would no doubt generate quite a bit of controversy. Allowing the CR Bureau the freedom to alter service unit classifications over time is essential to making the system as fair and effective as possible.

The Service Unit-Dollar

Simply by using standardized service units we can be assured that CR rankings will pretty fairly compare the environmental impact of two companies that provide the same kind of service (like two logging companies, two house builders, etc). But what if we want to compare two different types of companies (like a logging company versus a house builder)? This is where using the service unit alone breaks down. Any one service unit will inevitably have an arbitrarily set value that is different from all other service units. The average value of a kilogram of raw materials (like wood), for example, will be quite different from (and much lower than) the average value of housing for one person. If we were to so compare two such companies by their service units sold, the logging company would unfairly come out way ahead, simply because a kilogram of wood is obviously much smaller and easier to produce than an entire house, therefore presumably also requiring much less energy, pollution, and water to make.

Thus, what we will really use to compare environmental impact of any two companies is the *service unit-dollar* (SUD), i.e. the environmental impact per one dollar's worth of service unit created. To calculate a company's service unit-dollars, we multiply the number of service units produced by the average price of this service unit. Thus the general equation for calculating any of the environmental metrics will be:

$$\frac{\text{Service Unit-Dollars}}{\text{Environmental Impact}}$$

Or, a bit more specifically:

$$\frac{\text{(Total service units sold) x (Universal mean price per service unit)}}{\text{(Environmental Impact, per each metric)}}$$

By using the service unit-dollar instead of just the service unit, we account for the arbitrary difference in size and complexity of the average service unit of one type versus another. A company that builds houses would thus multiply the number of people it has housed by the average price of housing for one person. A logging company would multiply the number of kilograms of wood it produces by the average price of one kilogram of raw materials in general. We could then much more fairly compare the two companies, based on the environmental impact of one dollar's worth of housing versus one dollar's worth of lumber.

Universal Mean Price

One big question with this, of course, is why use the *average* price for each service unit (or "universal mean" as we have written above)? Well, first off, what this means is that if Dell sells, say, forty million computers one year, we would multiply that number by the average price of all computers sold in the US that year, not the actual price at which Dell sold them. So why don't we just use

Dell's price? This distinction probably sounds awfully picky, but it's important. To back up, remember that the reason we multiply by the price at all is so that we can compare the environmental impact of one dollar's worth of service, not the impact of one service unit (since the size of each service unit is arbitrary). But if we were to use the specific price of Dell's computers to accomplish this goal, Dell's CR rankings could easily be skewed (and manipulated) based on how cheap or how pricey its computers were. So if Dell were to have the cheapest computers on the market that year, then it would have produced fewer service-unit dollars while still producing the same number of computers (and presumably the same amounts of pollution), thereby punishing themselves with a lower CR ranking. By artificially raising its prices, Dell could then game the system and increase its CR ranking for no legitimate reason (all while hurting customers with higher prices). Therefore, by using the average price of all service units of the same type sold that year (in this case computers), Dell has no artificial, bad incentive to raise its prices or to be punished instead for lowering them, all while we still get the benefits of fair environmental comparisons with the service unit-dollar.

Comparing Different Industries

Another question for the SUD, of course, is why try to compare such different companies at all? It's inherently unfair, some might say. A computer manufacturer, a real estate business, and a logging company are so fundamentally different that it simply isn't fair to compare them. If we're going to compare companies at all we should only compare those in the same industry.

This is quite a fair objection, but there are two good reasons that we absolutely should compare all companies to each other. First, if we don't compare all companies to each other, we would have to compare companies only within separate categories of industries. (All housing construction companies compared only to one another, all oil companies only compared to each other, etc.) The inherent flaw to this approach, though, is the overlap of different industries. If every company fit neatly into one category then this could potentially work. Tire manufacturing only, grocery sales only, website design only. But anyone in the business world knows that this isn't the way things work. A large portion of companies, if not the majority, create products and services that overlap multiple industries. Netflix is a DVD rental service…turned internet streaming service, turned TV show creator. Honda makes cars…but also airplanes, boat motors, and robots. Trying to figure out whom else to compare these companies to would be an impossible nightmare. By using the service unit-dollar, though, all we have to do is add up each company's overall SUDs (regardless of what types of sales they came from) and then divide by overall environmental impact. Done.

The second big reason to still compare different types of businesses is that we should know where each business and even each industry stands compared to all others. It's probable that oil and gas corporations like ExxonMobil and Shell won't do so hot in their Environmental rankings. Some in the industry would likely cry foul about this, that it isn't fair. But if oil and gas production is an inherently dirty, environmentally bad business, shouldn't we know that? If CRR consistently ranks oil and gas companies in the 1 to 2 range out of 10, that's valuable information for consumers, and could potentially push those companies to support a move away from oil and gas. What's more, if

viable alternatives still don't exist (like, say, electric power up stations for cars fueled by solar panels) then all of those gas stations with Environment rankings of 1 or 2 are really still just competing with each other. So if a 2 is the best that can be done in that field, then that will still attract more customers than a 1 (i.e. the only other Environment ranking seen in town at a gas station).

All-in-all using service unit-dollars to compare companies to one another gives the most accurate Environment rankings possible.

Innovation Points

One of the most difficult challenges we face today is that so many important new discoveries are never made because they aren't deemed profitable. New drugs to treat diseases of poverty like Ebola. More biodegradable plastics. Safer methods for storing spent nuclear waste. Cheap water filtration systems for places without clean water. The list goes on and on.

To encourage such unprofitable innovations, the CR Bureau would award *innovation points* to any businesses that make these discoveries. Those points would then boost that business's CR Rankings (by a specified amount for a specified period of time). Innovation points would thus create a profit motive for all kinds of breakthroughs that could do a huge, untold amount of good for the world.

There are two key stipulations for earning innovation points. The first is that such discoveries must make a big, positive impact on the world *in a way that doesn't already boost that company's profits and/or CR Rankings*. In other words, this mostly just pushes companies toward working on *unprofitable* discoveries—discoveries like cheap nutritional supplements to combat hunger, vaccines for tropical diseases like African trypanosomiasis, simple fixes to stop certain invasive species from destroying ecosystems, you name it.

There are, however, plenty of *profitable* discoveries—discoveries that help a company's bottom line and/or boost its CR Rankings—that can still make the world a much better place. We should therefore still reward companies for such profitable discoveries with innovation points, so long as those discoveries are *shared*. The second key stipulation for receiving innovation points is thus exactly that. To get innovation points, each business would have to publish all details of its discovery to the public, so that its success could be easily and widely duplicated.

The issue here is that profitable discoveries are the kinds companies tend to be very reluctant to share. They would generally rather keep that information secret to maintain a competitive edge over their rivals. For instance, suppose a trucking company invents a new computer technology that reduces the fuel consumption of its truck fleet. The company could choose to keep that new technology private, cutting its own costs, boosting its Environment score with a lower carbon footprint, and then calling it a day. But what if that trucking company were to release this new fuel-saving computer program to the world, free for anyone else to use? That action could spark a huge industry-wide reduction in fuel use (and a corresponding reduction in greenhouse gas production). It

could then spark even more innovation when, a few months later, a tech company improves on that computer program to make it even better. Because we want to encourage such sharing of information, CRR would award innovation points to the trucking company, not for the benefits it already enjoyed *inside* the company's operations from its own lower use of gasoline (i.e. lower costs and a higher Environment ranking), but strictly for the benefits created *outside* of the company, that is the significant greenhouse gas reductions worldwide thanks to that new technology (i.e. benefits to the world that, without innovation points, would not have helped the company at all).

Bounty vs Reactive Innovation Points

Innovation points would be awarded in two ways. For *bounty* innovation points, the CR Bureau would set a bounty on a particular discovery that would fill an already known need. It's the same kind of idea as the $10,000 bounty set for anyone who captures some notorious Wild West gunslinger. Here, the bounty would instead be a set number of innovation points to be given to the company that fulfills one of many needs we already know need to be fulfilled: cures for various diseases, green technologies we already seek to accomplish, etc.

Second, the CRB would award *reactive* innovation points to companies that develop unanticipated innovations that still end up benefiting the world. This could include all kinds of things, from an app that allows workers around the world to more easily report sweatshop conditions to a new power generator that uses a previously untapped renewable energy source. As with innovation points in general, though, reactive innovation points would exclude any innovations that enrich the world only for the sheer sake of having a better product (like Apple with the iPhone). Instead, they would be reserved for discoveries that help improve some sort of major problem for the world's workers, environment, and communities, and only for the benefits to the world that aren't directly helping the company in question. Obviously the line between the two is a bit subjective, which is why the CRB would make any hard decisions for what counts and what doesn't.

Whether for bounty or reactive innovation points, the point level for each discovery would be set subjectively by the CRB according to how valuable it views that discovery to be for the world, levels that could be changed at any time to reflect the world's changing needs.

Innovation Points Math

We already said that innovation points would raise a company's CR Rankings, but let's dive a bit deeper into how exactly. Innovation points would equate to a certain increase in rankings per million service unit-dollars (SUDs) sold by the company, or, really their average SUDs sold for each of the previous five years. Let's unpack that. Let's say the discovery of a new vaccine awards sixty innovation points. The CRB would have already set a points-to-rankings increase ratio for one million SUDs, which let's imagine to be a 0.1 higher Community ranking for each twenty innovation points. That would then theoretically give a 0.3 bump for a company's Community ranking for the company that discovers the vaccine. However, remember that this bump is really per million SUDs. That means the bigger the company is that achieves the innovation (i.e. the more SUDs it sells each

year) the smaller the bump that company would get in its Community ranking for accomplishing the innovation. Why a smaller bump for bigger companies? Well, bigger companies pretty much by definition have bigger budgets. With bigger budgets, one can spend more on research and development. While we want big companies to aim for innovation points, we want small companies to do so, too. If the innovation points for the same discovery gave the same boost to a big company as to a small company, then the big company would have an unfair advantage in attaining innovation points and would gobble them up all the time. As with everything, the goal is to make a fair, competitive market, and by awarding each rankings increase per million SUDs, we make sure that all companies would have the incentive to strive for innovation points.

Preventing Fraud and Evasion

Any system encouraging more responsible behavior is only as strong as its enforcement mechanisms. As such, CRR would have strong punishments in store for companies that break the rules.

The main behavior CRR would presumably need to punish would be the falsification or omission of responsibility data. A business might intentionally fail to report the full number of hours driven by its company's cars, for example, to try to get a higher Environment ranking. Much of the data CRR would rely on already has its own punishments in store for such false reporting (like jail time and fines for tax evasion), but CRR would add its own rather strict punishments for such crimes.

Enforcement Mechanisms

The first, perhaps most potent punishment for companies that are found to falsify their responsibility data is lowered CR Rankings. The CR Bureau would be authorized to subjectively lower the rankings of any company any amount based on any available evidence that the company in question tampered with the data it presented or failed to report certain data in order to get a higher CR Ranking. What's more, any responsibility data (RD) first hidden but then uncovered by the CRB would then a.) be reincorporated into the company's CR Rankings and b.) count for much more than it would have initially, multiplied by up to ten and counted into a company's CRR for up to twenty years. Given that CR rankings are mostly based off of RD from the past year alone, getting caught trying to hide RD would make that toxic information count up to 200 times as much as normally, cleanly reported RD. That should be quite the incentive to just report the data honestly in the first place.

Falsifying and/or omitting RD would furthermore be considered a federal crime, punishable by fines, felony charges, and/or potential jail time. Repeated violations would also make a company subject to losing its business license within the country. Should that company be selling its goods from a foreign country, repeated violations would make the company subject to company-specific tariffs—tariffs that could rise in value as decided by the CRB given even more violations—or eventually even have the company's products banned from sale within the country.

Catching Cheaters

In addition to having harsh punishments to deter cheating, CRR would also be structured to catch as many such cheaters as possible, should they try. First, much of CRR's data reporting would be done with *two-way verification*. This data would have to be reported twice, in other words, once by each of the two sides in each transaction. For example, when Trisha's Trucking reports the number of miles it shipped Bill's Brooms this past year, it may be tempted to cheat and report more miles than it actually transported. That, after all, would increase the number of service units Trisha reports while keeping the environmental impact the same. Trisha could then see a higher Environment ranking. But on the flip side of this, Bill's Brooms would have to report the number of miles the brooms were shipped, too. Bill wouldn't want to have higher mileage listed, though. If anything he'd want to cheat by listing *fewer* miles than the brooms actually took to ship (for the same reason of getting a higher Environment ranking). Trisha and Bill are thus each wary of the other trying to cheat and highly unlikely to collude and cheat in the same direction, keeping the other in check. And if those two numbers *are* different when reported to the government, that discrepancy would automatically be red flagged for investigation. The same would go for the gasoline Trisha buys from Greg's Gas. Trisha would want as low a number of gasoline gallons shown as possible, Greg would want as high a number as possible, and they would therefore not be motivated to cheat together. If either one cheats alone the two numbers will end up different, an easily caught discrepancy that would then be investigated.

Beyond two-way verification, CRR would have still more ways to catch cheaters. First, it would offer financial rewards to anyone who provides verifiable evidence of cheating, with bigger rewards for bigger instances of cheating. That would be reward money payable to, say, employees of the cheating companies, residents of the nearby town taking the brunt of the unreported pollution, or even rival companies sick of competing against unfairly false numbers. Note that because of the reward, all of these groups would have motivations opposite of the cheating company. Cheating companies would thus have a high likelihood of being reported, and any company thinking of cheating would thus have all the more reason to think twice before doing so.

One extra major asset the CR Bureau would have in catching cheaters is the vast trove of data it collects to run the CRR system. Part of its investigation of fraud would be to create algorithms that red-flag aberrant data, along with ranking the statistical unlikeliness of each bit of data provided. The more unlikely any RD reported, the higher up the priority list it becomes to be investigated.

With two-way verification, rewards for reporting data falsification, and sophisticated algorithms to catch fishy data, the CR Bureau would stand a high chance of catching any cheaters in the system. With the stiff punishments that follow, such cheaters would suffer greatly. Given the high risk of being caught and punished, most any business would have a strong motivation to never try to cheat the CRR system in the first place.

Work Done In Foreign Countries

Any company wishing to sell its products in a country that has enacted CR Rankings would have to report the same responsibility data. That goes for companies working anywhere around the world. So if the United States passes a law enacting the CRR system, any business anywhere in the world that wants to sell its goods in the United States would have to play ball and provide the same data to the US government—about how well it pays its workers, how much it pollutes, etc—regardless of whether its factory is in Kansas or New Delhi.

We discuss this *universal* nature of CR Rankings at much greater length in the Our Current Approach is Doomed to Fail section of **Why CRR**, but suffice it to say such a law would have much greater reach and power than *localized* laws that only govern behavior in the one small area where the law is passed. Also suffice it to say that a universal law like CRR has precedents before it and should operate entirely within a preexisting legal framework. No foreign business would *have* to sell its goods in a United States that runs the CR Rankings system, but if it chooses to do so then it would have to play by US rules—that is, to provide the data needed for CRR and print its CR Rankings on its products. It's the same idea as how a foreign car company must abide by CAFE Standards in order to sell its cars in the US.

Of course, perhaps the biggest impediment to having foreign companies submit data even when their home countries have not enacted their own CRR system is that companies there could easily falsify data. Why send the real numbers of pollutants you've created when you could easily send fake, much rosier numbers instead? Your home government won't punish you for it, so what do you have to lose? And who is around to catch your doing so?

The two main keys to prevent this kind of foreign data falsification are the CRR system's direct punishments and market-based leverage. We list the punishments foreign companies would be subject to for fraud in the previous section on **Preventing Fraud and Evasion**: much lower CR Rankings, company-specific tariffs, and, in extreme cases, being outright banned from selling goods in the US. Catching foreign companies that do so may not be quite as easy as catching them here in the home country (if only because two-way verification may not be possible with some foreign companies), but rewards would still be given for credible information about rankings fraud, and algorithms would still be trained towards catching unrealistic data. Any other outside information gathered by the CRB would also factor into catching cheating companies, including investigations done by independent watchdog groups. The independent investigative nonprofit China Labor Watch, for example, reported in 2013 that Pegatron Shanghai, a factory that produces the iPhone, works its employees an average of six days a week for eleven hours a day at $1.50 an hour. After sending investigators into three Pegatron factories, CLW also reported 86 labor rights violations from underage labor to insufficient safety training to forced overtime.[16] Such evidence would help further catch and punish foreign cheaters to make sure almost everyone plays by the rules and that those who don't get punished.

The second key to having this universal system work, as we discuss in **Why CRR**, is leverage. Enacting the CRR system in a country like the United States means enacting it where there is also the largest consumer market in the world. Nowhere else in the world has as lucrative a pool of customers as the US. The threat of low rankings, tariffs, or being completely banned from the fattest, juiciest marketplace in the world is therefore quite the potent threat. This gives CRR leverage over foreign companies—leverage to keep them from cheating. The same would go should CRR be enacted in any other high-consumption countries, like Australia, Canada, Japan, the UK, and European Union member states. In any such country, foreign companies would have a lot of lucrative sales to lose should they choose to cheat.

Of course, talking of enacting CRR in other countries brings us to the ideal end-goal scenario, which is to have CRR passed as the law of the land throughout the world. The more countries that sign-on to the system, the more easily all countries can help police the businesses within their own countries to ensure honest cooperation.

Part-Time Workers

In addition to the seven aforementioned questions to be asked as part of the yearly individual federal tax return and used to calculate Worker Safety & Health scores, each worker would also be asked the following eighth question: "If you work part-time (i.e. fewer than 35 hours a week) do you do this by choice or because your employer will not offer you full-time employment?" For calculation of Workers subsections "Distribution of Wealth" and "Pay Relative to Local Standard of Living," employees who answer that they work part-time *by choice* will have their total yearly compensation divided by their total yearly number of hours and multiplied by the median yearly number of hours of all employees at the company in question who either work full-time or work part-time but not by choice. By calculating these metrics in this way, companies who hire such by-choice part-time workers will not be punished with abnormally low yearly compensations for such workers. Those part-time workers who mark that they work part-time *not by choice*, on the other hand, will have their yearly compensation kept as is for calculation of the above metrics. In such a situation the company will be responsible for the low yearly pay of part-time employees, thus encouraging the company to create jobs that help its employees live comfortably year-round.

Internships

Internships at for-profit companies are to be considered, by default, employment positions, such that whatever wages (or lack thereof) given to such interns will be counted just like the wages given to all other employees in the calculation of all CR Rankings. (In other words an unpaid internship should be an actual internship, not an excuse for free labor.) In order to have an internship be discounted from consideration for a company's CRR, the company in question must provide clear

evidence that such internships pass all six of the following "unpaid internship" requirements (as issued by the US Department of Labor):

> 1.) The internship, even though it includes actual operation of the facilities of the employer, is similar to training which would be given in an educational environment
> 2.) The internship experience is for the benefit of the intern
> 3.) The intern does not displace regular employees, but works under close supervision of existing staff
> 4.) The employer that provides the training derives no immediate advantage from the activities of the intern; and on occasion its operations may actually be impeded
> 5.) The intern is not necessarily entitled to a job at the conclusion of the internship
> 6.) The employer and the intern understand that the intern is not entitled to wages for the time spent in the internship

This requirement still allows companies to provide unpaid internships when the internships actually do function as internships. When instead these internships are just an excuse for free labor, the company in question will be punished with a lower Workers CR Ranking.

Makeup of CRB Committees Ruling on Discrimination

Whenever a CRB Committee would be commissioned to rule on changes in a company's rankings stemming from discrimination within the Additional Factors metrics, the committee in question would (if at all possible) have at least a quarter of its members come from the group of people potentially discriminated against, if not more. So, for a pay discrimination case regarding African-Americans, the committee should be at least 25% African-American, etc. This would be done in order to assure fairness to the potentially aggrieved group.

Not-For-Profit Companies

Non-profit companies will still be ranked in CRR but would have several differences from normal, for-profit companies. They are as follows:

- Shouldering the Tax Burden: Not applicable to non-profits, since they do not pay taxes
- Charitable Giving: Not applicable to non-profits, since they are the very beneficiaries of charitable giving. It would fundamentally not make sense to encourage them to re-donate their donations to other charitable organizations.
- Environment (all): Each metric would be calculated as the environmental impact per one dollar of budget used (not per SUD). Many if not most non-profits have goals that are too vague to easily assign them service units (like generating awareness, lobbying politicians, etc). Even such services that could be defined and categorized with service units, though, have no

discernable market value since such services are not for sale. Hence trying to use the normal system of service unit-dollars does not seem feasible for non-profits, so instead we use the second best option of environmental impact per one dollar of budget spent.

Basic Needs

For the calculation of the Local Standard of Living (for the *Pay Relative to Local Standard of Living* metric), if median housing, utilities, food, and health care costs for a locality do not already ensure adequate access to safe housing, clean water, sanitary waste disposal, the fulfillment of basic caloric needs, a K-12 education for all children in the family, and reliable internet access, then the gap between the average estimated cost of fulfilling any of these basic needs and the actual median cost of living will be added to the Local Standard of Living monetary sum for each county/city. This should ensure that companies don't automatically get rewarded for paying its employees well relative to the local median cost of living…if that local median cost of living is so low that it still spells poverty for the locals living at median levels of wealth.

Eliminating Statistical Outliers

For each set of relative 0 to 10 rankings given for each metric, the top two percent and the bottom two percent of companies will all be given a 10 and a 0, respectively. When determining the relative rankings of all other companies in between, the 98th percentile will be used as the benchmark 10 score and the 2nd percentile will be used as the benchmark 0 score. This will be done in order to eliminate the influence of any statistical outliers. Without this change, one issue is that certain companies could feasibly try to undermine the rankings system by creating a separate shell company with absurdly high or low raw CRR results (e.g. it only pays two people and pays them equally for a perfect Workers ranking). Getting artificially low results for this fake company could make its own low ranking much higher by comparison, or getting artificially high results could then bring its elite competitors to lower rankings by comparison. Such tampering wouldn't be good for anyone. Setting the bars at the 2nd and 98th percentiles should do much to eliminate the threat of such meddling.

Individualized Metric Percentages

One of the wonderful strengths of our world is its diversity of opinions. It should therefore come as little surprise if, upon the enactment of CR Rankings, some individuals out there might disagree with the exact percentages given to each metric within the system. Some might think that Distribution of Wealth should matter the most. Others might say Shouldering the Tax Burden. Others still might side with Non-Greenhouse Pollution as the most important factor in judging each company.

One thing to note is that all metric percentages would be subject to change as the CR Bureau sees fit, allowing for popular changes to how the metrics are weighted in a way that would likely satisfy many if not most citizens who disagree with the current setup. Should any individual consumer still not be satisfied with these percentages, though, all of the data the CRB collects and the rankings created from them would be 100% available to the public. Therefore, anyone could foreseeably create his or her own metrics percentages. It should be quite feasible to create phone apps and websites that would allow each consumer to create their own metrics percentages and then rank all companies accordingly.

A System Built To Change

What we put forth on this website is the beginning vision of how to structure the CRR system. We have toiled over every detail of its construction to make sure this system is as simple, efficient, and effective as possible. We thus feel quite confident that the CRR system, as described, would work incredibly well and would bring widespread positive change.

That being said, however, Corporate Responsibility Rankings is a system built to change. The world and our understanding of it constantly changes, and as a result, CRR can and almost definitely should change over time too. Once the law is enacted, the CR Bureau would be in charge of making sure CRR adapts as needed to always best fulfill its purpose.

The CRB Board would meet at least once every six months (if not more) to alter any rules as they see fit. When evidence of previously unknown pollutants surfaces, then such pollutants should be added to the list of pollutants that factor into a business's Environment score. If climate change comes to look even worse over time, then perhaps it should be adjusted to take up more than 40% of the Environment ranking. On the other hand, if someday down the road we get our greenhouse gases under control, then perhaps Carbon Footprint could come down below 40%. Metrics could be added. Metrics could be deleted. Overall the CRB should do whatever is needed to update these rankings over time so that they may always reflect our best idea of how to most accurately measure corporate responsibility and how to best motivate companies to do better.

Even now before this system is put in place, though, we welcome any suggestions for how to make the system work better. Over the coming months and perhaps years we will most definitely fine-tune the system based on your ideas and on any other evidence showing that it could be even better structured. If you have any such feedback to give now, please do at our Contact Us page!

Endnotes

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