Rationale, Methodology, Viability and Scientific Validity

The Problem: The 19 Gigaton Gap

According to the UNEP Emissions Gap Report[1], putting ourselves on track for limiting global warming to 2°C—an increase that we can absorb with limited consequences—requires reducing global annual emissions by 19 gigatons (Gt) by 2030. This is a gap that the national agreements and pledges from Paris Agreement do not account for. The Paris Agreement sets the framework for national policy action and leaves a gap between the implementation of policy and the action required to end the crisis. There has been to date no framework that accounts for individual action (or small group/business action) as a game-changing opportunity to reduce emissions. This World Resources Institute article[2] provides a great summary of how the gap works.

Why 2030?

Understanding the urgency of the situation begins with understanding that there is a limited amount of carbon that we can put into the atmosphere before we reach the 2°C limit. Based on moderate estimates, we are due to use up the budget in about 18 years[3]. The budget for 1.5°C is much smaller and expected to be used up within one year. While the budget for 2°C is finite, the gap articulated in the UNEP Emissions Gap Report is not. The gap between where we are headed and where we need to be headed continues to widen for every year that emissions are not reduced. With the carbon budget closing, the consensus of scientists is that by 2030, our opportunity to close that gap becomes significantly less attainable.

Rationale and Methodology

[1] https://www.unep.org/resources/emissions-gap-report-2021

[2] http://www.wri.org/blog/2014/11/unep-emissions-gap-report-calculates-necessary-emission-reductions-out-2030

[3] https://www.mcc-berlin.net/en/research/co2-budget.html

The mission of 2030 or Bust is mobilizing humanity to end the climate crisis, and it is our committed position that anyone who wants to do something about ending the climate crisis should have that opportunity. Existing alternatives for reducing one's personal carbon footprint are very complex, and as a result, not widely used. Our intention is to make this global initiative simple, easy and engaging. By simplifying and gamifying the mission of ending the climate crisis, we open the door for the everyday person to get involved.

Phased Approach to Research & Development

Phase one of user engagement uses data based on US national averages. Averages work well when a lot of people in many locations participate. Our focus in this phase is to grow our numbers as fast as possible. App development will focus on features that make this possible.

In phase two, funded research will allow us to calculate emissions estimates based on zip codes and specific regions globally. These revisions will be responsive to our results and adjusted on an ongoing basis to match what is needed to produce a 19-gigatons reduction in emissions.

Strategy

2030 or Bust's engagement strategy includes several key components:

- Start with the high-emission/high-income segments (such as the US), and then quickly incorporate regionally-specific versions of the initiative.
- Offer a radical shift in the perception of climate change from overwhelming and inaccessible to simple, actionable and even fun. 2030 or Bust makes the game of ending the climate crisis clear, simple, and winnable by equipping civil society with information and opportunities to take effective action.
- Build strategic partnerships with cities, SMEs and other organizations all over the world to grow the initiative to 500 million participants by the end of 2030. This will allow us to capture both individual and collective action because of it.
- Leverage local power and tailored action through local chapters in coordination with city officials.
- Report real-time progress against the endgame:19 Gt by 12/31/2030.
- Concentrate on pop-culture messaging designed to attract, engage and mobilize the target audience.

Our market plan begins in the U.S. and other industrialized countries with the highest per capita emissions and economic capacity to take significant action (such as Europe and Australia), and then spreads to regions where the national emissions are high but with a lower per capita impact (i.e. India, China). From there, we expect marketing to grow organically throughout the globe.

Vetting Our Approach

Our approach was designed in partnership with Joep Meijer, a leading international expert on carbon life cycles. Joep Meijer is the founder of Climate Buddies, a nonprofit that works with households, schools and houses of worship to reduce their carbon footprint. He is also heavily involved in advocacy at the city level in Austin Texas, helping set the goal for NET-

ZERO impact city-wide by 2050, assisting in the development and adoption of the implementation plan, and the purchase of 2,000,000 solar panels for the Austin Energy municipal utility. His carbon footprint is minus 14000 metric tons. Joep is also owner/president of The Right Environment, which helps clients to define sustainability strategies using life cycle assessment techniques.

The overall structure, parameters and registers for bringing the opportunity of ending the climate crisis to civil society were developed in collaboration with Prof. Dr. Niklas Hohne, a founding partner of NewClimate Institute. He is also Special Professor for "mitigation of greenhouse gas emissions" at Wageningen University. Since 1995, he led numerous studies related to the international climate change negotiations and national climate policies, for example several evaluations of countries' performances in climate change. He is lead author for the IPCC Fourth and Fifth Assessment Report for the chapter on climate policies and international cooperation. He is also lead author of the UNEP Emissions Gap Reports 2010 to 2015, the definitive report on the gap between the emissions reductions planned through the Paris Agreement and the pathways for limiting warming to 1.5° C and 2° C. He created the Climate Action Tracker that tracks commitments and actions of countries on climate change.

This methodology was also reviewed by Laura Segafredo, former contributing author of the UNEP Emissions Gap Report, and at the time, Executive Manager of the UN's Deep Decarbonization Pathways Project at Sustainable Development Solutions Network (a Global Initiative for the UN). She was also Lead Economist at the ClimateWorks Foundation. She has a PhD in Energy Studies from the University of Padova (Italy).

Aggregating Participation to Total Carbon Saved

The amount of carbon we are attempting to address and translate here into aggregated individual action is an annual reduction of 19 billion tons, also referred to as gigatons (Gt) by the end of 2030. If every person in the world reduced their carbon emissions by 20%, we would globally reduce by approximately 10 Gt. This is based on the approximately 7.5 billion people and the individual carbon footprint of the average world citizen of 5.56 metric tons per person. Of course, not every person in the world will participate. If instead, as an example, 1 in 14 people (approximately 500,000,000 people) reduced their carbon emissions by approximately 20 tons, we would accomplish the same.

As a unilateral approach, this is unrealistic, given that statistically, the higher the GDP, the higher the emissions rate, resulting in a wide range of per capita emissions for individuals. Different strategies must be applied to different population segments.

We have developed a matrix of potential actions and profile scenarios for people that participate defining what type of actions they would commit to. The 500,000,000 people corresponds to a mid-level of committed action that would account for the 10 Gt. If people under-commit, we need more people to participate, and vice versa.

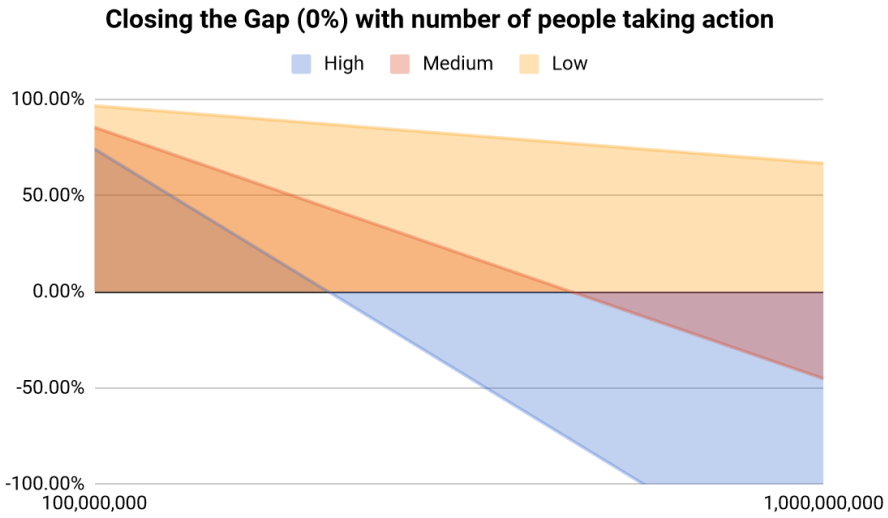
In general, we expect that our strategy will be a phased approach, beginning with developed countries. We will prioritize our market segments based on the a cross-reference of the following criteria:

- Which areas have the most economic and political capacity to change?[4]
- Where are the biggest emitters?[5]
- Where are people most aware and concerned about climate change? [6]

Research and development planned in phase two of the project will be used to identify the full strategy, make the challenge more regionally appropriate and data more accurate, see what actions people are taking and compare that to our estimates and tweak the actions and number of people involved going forward.

Scenario Planning – Can it be done?

The actions in the 2030 or Bust app are selected to relate to choices that individual people and small- to medium-size organizations make on a regular basis. The actions are associated with a greenhouse gas reduction score. Each action then can be taken by x number of people. Scenario planning can look at how many people are taking what actions and the corresponding greenhouse gas emissions reductions (emissions factors).



Graph 1. Scenarios to close the gap (getting to 0% in this graph)

A general model was developed using mostly US-based greenhouse gas reductions defining three paths: 1) a high level of participation of a person, 2) a medium level of participation and 3) a low level of participation. A high level of participation means a person that has high emissions, enough wealth to take the actions and a high number of actions taken. A low level of participation means a person that engages in a low number of actions that take relatively little money or save money. Graph 1 show the results, and it shows that about 550 million people need to take medium- level action to close the gap (the zero percent

[4] http://en.actualitix.com/country/wld/gdb-per-capita.php
[5] http://en.actualitix.com/country/wld/co2-emissions-per-capita.php
[6] http://www.carbonbrief.org/media/426740/lee-et-al-2015-fig1.png

line). That number can be reduced to 300 million if more people take higher leverage action, and can reach 1 billion people if people take lower leverage actions. 2030 or Bust chose to use the medium scenario as the starting point, aiming to get 500 million people to take action. Half of the emissions reductions would come from individual actions, the remainder through collective action because of it.

Where Does the Carbon Emissions Data Come From?

Global Carbon Footprint Data (including per capita greenhouse gas emissions) from the World Bank's World Development Indicators[7] are used. The numbers include per country per person data and can be used to set individual national goals. This means that people in carbon intensive countries can also reduce their emissions the most.

Transportation Choices: The greenhouse gas emission reduction from transportations choices is straightforward. It is based on the direct emissions per type of fuel, the car performance and the number of miles driven. This data is known and use simple formulas based on the carbon content of fuels, miles per gallon, and number of miles.

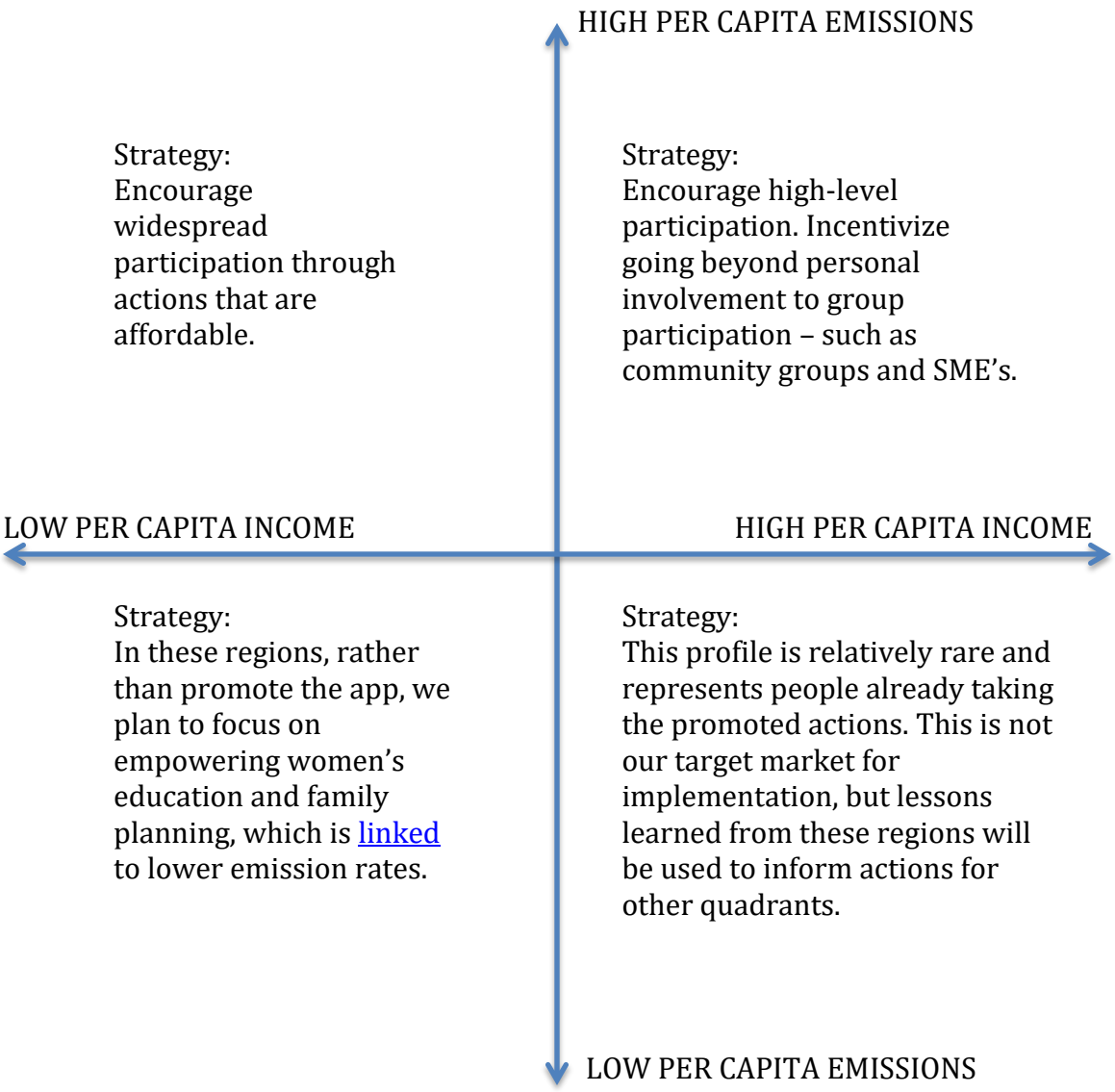
Eating Less Meat: Greenhouse gas reduction data for the impact of reducing the use of animal products, including meat and dairy, varies as dietary patterns vary. However, it is possible to construct a national average using several food databases, most notably estimates used by the U.S. Department of Agriculture's (USDA) and research compiled by University of Michigan.[8]

Buy Less Stuff: The estimates used for the carbon emissions of buying products are based on reliable but generic data sets that represent the average carbon intensity of products available on the US market in US representative average consumption categories. This means that the accuracy of these estimates varies by person but that the accuracy of the aggregate will increase with the number of people participating.[9]

Going Solar: Data for these estimates are based on national averages for greenhouse gas emissions factors from the US grid. Involving a wide range of US localities will increase the accuracy of this data, as it will allow for the use of specific grid data for participating people.[10]

Plant A Tree: Greenhouse gas sequestration from forestation and reforestation varies depending on soil type, tree age, and location/biome. We start only with reforestation in the rainforest because of the larger positive impact. The numbers are based in internationally accepted land use data developed by the International Panel on Climate Change (IPCC). While later versions of the app can use estimates based on specific reforestation projects, we have selected 1 metric ton as the average carbon reduction from planting a tree in a rainforest per year. This represents both the carbon stored in the soil and the tree itself.

[7] http://data.worldbank.org/topic/climate-change
[8] Martin C. Heller and Gregory A. Keoleian, 2014. Greenhouse Gas Emission Estimates of U.S. Dietary Choices and Food Loss. Journal of Industrial Ecology
[9] http://www.bls.gov/news.release/cesan.nr0.htm
[10] https://www.wec-indicators.enerdata.eu/household-electricity-use.html



Graph 2. Positioning of Countries using Income and Emissions as Indicators

Regional Strategies

As we move out of the western world, personal carbon emissions shrink, leaving less to give up. This lowers the ability of the individual (acting alone) to offset their personal carbon impact. However, also at play is the ability of many to impact larger entities, such as small businesses, community groups and churches (not accounted for in the Paris Agreement). We expect these to balance each other. These outcomes will be assessed in real time. Once we have a significant number of people participating, we will be able to account for those adjustments with greater and greater predictability.

This is fundamentally the same logic used in the Paris Agreement but applied to individuals and focusing on the near-term reality of the 19 Gt gap in emissions. The app is our accounting system to track actions promised and actually taken. The accuracy of the app will be improved over time as we further develop the app and our marketing strategies.

Said more plainly, if people wake up to the reality we are facing and choose to participate fully, we have a real possibility of bridging that initial gap and creating an unstoppable driver for the marketplace and for politics. Some people will take more action than they record, some people will take other actions than can be recorded as they get inspired, where others will overpromise and take less action. With more and more people participating, the difference between these variations will impact the aggregate less and less and our model will become more and more robust.

Case study: US Capacity

People living in every country can contribute, but our strategy will vary depending on the location as indicated in Graph 2. The US is a high emitter per capita and has the wealth to take the high-leverage actions. Table 1 includes a screening assessment looking at the volume of action that is possible (to see if there are any technological limitations), combined with the assumption that 1 on 7 Americans will participate (44 million[11]), spreading the level of engagement over the options that are provided in the 2030 or Bust app (percentages per action). The two limitations are the volume of electric cars available, which is expected to be 20 million in the world, with the US currently accounting for 16% of sales[12], and the number of roofs available on single-family homes[13] that have a good sun exposure (assumed 50%). From table 1 it can be concluded that, with a high level of participation, the total US greenhouse gas savings potential is 1.04 metric gigaton, or 13% of the 2030 or Bust goal. The savings potential per person is 22.5 metric tons which exceeds the high-level scenario from graph 1. The total savings add up to 14.5% of the national emissions.

Case study EU Capacity

Most of these actions translate directly to similar countries, like most European countries, except for the savings from going solar. There are several reasons why: most other countries have a lower electricity consumption, the number of households with a good solar roof, and the greenhouse gas emission intensity from the current grid that are displaced are different for each country.

Table 2 show the potential savings when looking at 28 member states of the Europe Union of 1.44 metric gigatons, or 18% of the 2030 or Bust goal, with a savings potential per person of 19.7 metric tons adding up to a total emission savings of 32% of the 28 member states national emissions using the following statistics: 510 million citizens[14], 1 in 7 participating (73 million people), 58% own their own roof[15], an average of 2.3 people per household[16], with an average of 0.275 kg of greenhouse gas emission per kWh of electricity[17], a consumption of kWh per household[18], a 20% share of global EV sales and with an greenhouse gas emission of 4.45 metric gigatons[19].

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[11] https://en.wikipedia.org/wiki/Demography_of_the_United_States
[12] https://www.iea.org/publications/freepublications/publication/GlobalEVOutlook2017.pdf
[13] https://www.census.gov/hhes/www/housing/census/historic/units.html
[14] https://en.wikipedia.org/wiki/Demographics_of_the_European_Union
[15] http://ec.europa.eu/eurostat/statistics-explained/index.php/Housing_statistics
[16] http://ec.europa.eu/eurostat/statistics-explained/index.php/Household_composition_statistics
[17] https://www.eea.europa.eu/data-and-maps/indicators/overview-of-the-electricity-production-2/assessment

The US and EU potential combined leads to 2.48 metric gigatons of savings, or 31% representing 833 million people or 11% of the world population of 7.5 billion people. The case studies for both the US and the EU show that participation in high leverage countries can lead to higher-than-average savings, getting us closer to our goal of closing the gap faster.

Other Category of Participant: People Taking on Small Businesses

We anticipate that global individual participation will account for the majority of GHG emissions savings, but not all. This is where actions of leadership come in. As with individuals, small and medium enterprises (SMEs) are not accounted for in the Paris Agreement. There is a significant potential to impact carbon savings in small businesses to close the gap. For example, according to the Small Business Footprint calculator from UC Berkeley, a single-facility retail business in California with 7 employees and $400,000 in revenue has a footprint of 140 metric tons[20]. There are approximately 29 million small businesses in the US alone[21].

Although the full analysis has not been completed, the potential for carbon savings from individuals working in small businesses will easily bridge the rest of the emissions gap we are committed to closing.

Table 1. Potential **US** greenhouse gas savings from individual actions

Category	Action	GHG reduction (metric tons)	Scenario US (capacity)	US People participating	Total GHG savings (metric Gtons)
Go Solar	Install solar on your roof (12,000 kWh / average US household)	6.9	38,156,000	20,062,112	0.138
	Install solar on your roof (8,000 kWh / typical energy efficient US household)	4.6	0	0	0
	Install solar on your roof (4,000 kWh / green focused US household)	2.3	0	0	0
Plant a tree	Plant 16 trees or protect 16 acres (your personal 2030 or bust goal)	16	no limitation	11,535,714	0.185
	Plant 11 trees or protect 11 acres (US average personal footprint)	11	no limitation	11,535,714	0.127
	Plant 1 tree or protect 1 acre	1	no limitation	11,535,714	0.012
	Plant 25 trees or protect 25 acres (US average household footprint)	25	no limitation	11,535,714	0.288
Eat less meat	Go Vegan (you)	0.75	no limitation	16,150,000	0.012
	Eat meatless 3 days per week (you)	0.33	no limitation	16,150,000	0.005
	Go Vegan (household)	2	no limitation	16,150,000	0.032
	Eat meatless 3 days per week (household)	0.8	no limitation	16,150,000	0.013

[18] https://www.eea.europa.eu/data-and-maps/indicators/final-energy-consumption-by-sector-9/assessment-1
[19] http://ec.europa.eu/eurostat/statistics-explained/index.php/Greenhouse_gas_emission_statistics
[20] http://coolclimate.berkeley.edu/business-calculator
[21] https://www.sba.gov/sites/default/files/advocacy/United_States.pdf

How to get around	Walk or bike 20 miles a week	0.5	no limitation	21,471,429	0.011
	Drive 5,000 fewer miles per year	2.2	no limitation	15,227,143	0.033
	Buy a higher efficiency vehicle (from 15 to 40 mpg)	5	no limitation	15,227,143	0.076
	Buy a new hybrid	3.3	no limitation	15,227,143	0.050
	Buy an EV (electric vehicle) and plug into a standard grid	5.1	3,200,000	0	0.000
	Buy an EV (electric vehicle) and use renewable energy	6.6	3,200,000	3,200,000	0.021
Buy less stuff	Buy $500 less stuff (in one year)	0.5	no limitation	23,071,429	0.012
	Buy $1000 less stuff (in one year)	1	no limitation	23,071,429	0.023
				Total	**1.039**

Table 2. Potential **EU** greenhouse gas savings from individual actions

Category	Action	GHG reduction (metric tons)	Scenario EU (capacity)	EU People participating	Total GHG savings (metric Gtons)
Go Solar	Install solar on your roof (12,000 kWh / average US household)	2.45	0	0	0.000
	Install solar on your roof (8,000 kWh / typical energy efficient US household)	1.64	0	0	0
	Install solar on your roof (4,000 kWh / green focused US household)	0.72	64,304,348	31,677,019	0.023
Plant a tree	Plant 16 trees or protect 16 acres (your personal 2030 or bust goal)	16	no limitation	18,214,286	0.291
	Plant 11 trees or protect 11 acres (US average personal footprint)	11	no limitation	18,214,286	0.200
	Plant 1 tree or protect 1 acre	1	no limitation	18,214,286	0.018
	Plant 25 trees or protect 25 acres (US average household footprint)	25	no limitation	18,214,286	0.455
Eat less meat	Go Vegan (you)	0.75	no limitation	25,500,000	0.019
	Eat meatless 3 days per week (you)	0.33	no limitation	25,500,000	0.008
	Go Vegan (household)	2	no limitation	25,500,000	0.051
	Eat meatless 3 days per week (household)	0.8	no limitation	25,500,000	0.020
How to get around	Walk or bike 20 miles a week	0.5	no limitation	34,428,571	0.017
	Drive 5,000 fewer miles per year	2.2	no limitation	24,042,857	0.053
	Buy a higher efficiency vehicle (from 15 to 40 mpg)	5	no limitation	24,042,857	0.120
	Buy a new hybrid	3.3	no limitation	24,042,857	0.079
	Buy an EV (electric vehicle) and plug into a standard grid	5.1	4,000,000	0	0.000
	Buy an EV (electric vehicle) and use renewable energy	6.6	4,000,000	4,000,000	0.026

Buy less stuff	Buy $500 less stuff (in one year)	0.5	no limitation	36,428,571	0.018
	Buy $1000 less stuff (in one year)	1	no limitation	36,428,571	0.036
				Total	**1.438**

Why 500 million?

First, it's important to note that we are only interested in working in the gap left by the Paris Agreement. Because emissions from individuals and businesses under 500 employees are not accounted for in the Paris Agreement, reduction in these two categories reduces the gap. The number 500 million comes from estimates based on the most complete statistical information available on carbon emissions. We chose countries that either had the highest emissions per capita or larger populations. We eliminated countries in which it would be very difficult to market. 472 million individuals reducing emissions by 75% from the following 19 countries can produce a reduction of 4.2 Gt. The additional 3.8 Gt comes from 91 million small businesses that reduce their emissions to 0. This 91 million small businesses represent a total maximum participation of about 72 million (assuming that these are people not already participating individually). This puts total individual participation at between 472 million and 544 million.

With the exception of the US, for which an actual estimate was found, the number of small businesses per country was based on the general estimate from the International Finance Corporation's report[22]: MSME Country Indicators, which estimates the global average number of SME's at 32.18 per 1000 people. Number of employees were estimated based on US numbers from the Small Business Administration.[23] Tons emitted by small businesses in each country were extrapolated from US numbers estimated by the University of California at Berkeley's carbon calculator.[24] This estimate accounted for the estimated numbers of businesses in three size categories (those with employees under 20, from 20 to 99, and between 100 and 499). Estimated average revenue at each size was also included in the carbon calculation.

[22] https://www.smefinanceforum.org/sites/default/files/analysis%20note.pdf

[23] https://www.sba.gov/advocacy/firm-size-data

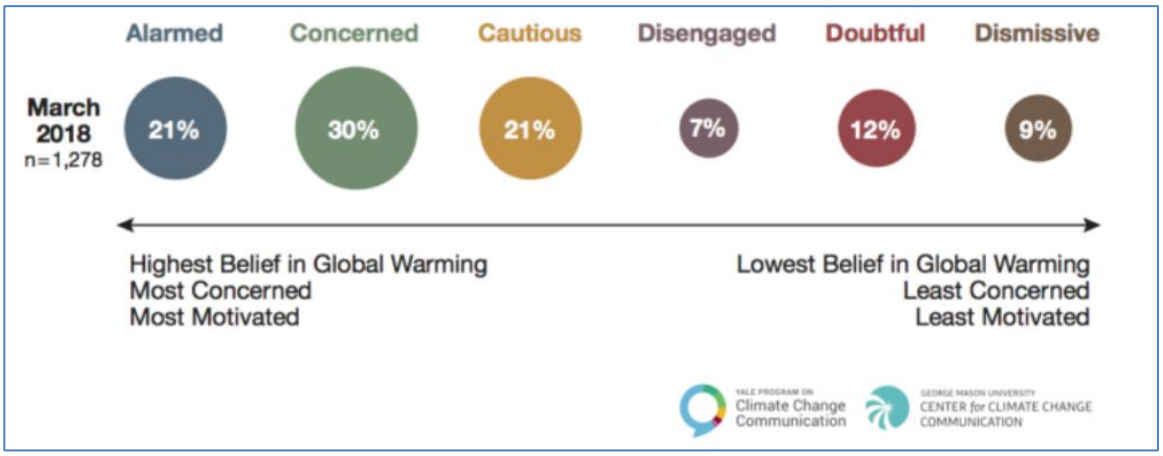
[24] http://coolclimate.berkeley.edu/business-calculator

Country	Population 2011	GHG per country	GHG Per Capita	Exepcted % Participation	Expected # Participating	Expected % Reduction	Per Capita Reduction Target	Total Reduction	Cummulative Reduction	Cummulative Participation	Estimated # of SME's	% of Total from List	Possible Tons from SME's	Number of Employees
Qatar	1,905,437	112,150,603	58.86	0.30	571,631	0.75	44.14	25,233,886	25,233,886	571,631.10	61,316.96	0.000670	5,212,939.91	100,460
South Africa	51,553,479	597,113,936	11.58	0.30	15,466,044	0.75	8.69	134,350,636	159,584,521	16,037,674.80	1,658,990.95	0.018138	141,041,235.28	2,718,046
Kuwait	3,239,181	119,635,840	36.93	0.30	971,754	0.75	27.70	26,918,064	186,502,585	17,009,429.10	104,236.84	0.001140	8,861,828.50	170,779
Aruba	101,936	3,143,341	30.84	0.30	30,581	0.75	23.13	707,252	187,209,837	17,040,009.90	3,280.30	0.000036	278,878.94	5,374
Japan	128,000,000	1,476,675,513	11.54	0.30	38,400,000	0.75	8.65	332,251,990	519,461,828	55,440,009.90	4,689,609.00	0.051271	398,693,099.97	7,683,330
Luxembourg	518,347	14,093,915	27.19	0.30	155,504	0.75	20.39	3,171,131	522,632,959	55,595,514.00	16,680.41	0.000182	1,418,106.06	27,329
United Arab Emirates	8,734,722	235,588,026	26.97	0.30	2,620,417	0.75	20.23	53,007,306	575,640,264	58,215,930.60	281,083.35	0.003073	23,896,660.41	460,519
Bahrain	1,306,014	31,828,175	24.37	0.30	391,804	0.75	18.28	7,161,339	582,801,604	58,607,734.80	42,027.53	0.000459	3,573,024.20	68,857
United States	312,000,000	6,968,855,181	22.34	0.30	93,600,000	0.75	16.75	1,567,992,416	2,150,794,019	152,207,734.80	35,950,294.00	0.393040	3,056,360,170.00	58,900,000
Australia	22,340,024	480,494,985	21.51	0.30	6,702,007	0.75	16.13	108,111,372	2,258,905,391	158,909,742.00	718,901.97	0.007860	61,118,369.55	1,177,830
Saudi Arabia	28,788,438	615,116,180	21.37	0.30	8,636,531	0.75	16.03	138,401,140	2,397,306,531	167,546,273.40	926,411.93	0.010128	78,760,094.10	1,517,809
Oman	3,210,003	68,152,134	21.23	0.30	963,001	0.75	15.92	15,334,230	2,412,640,762	168,509,274.30	103,297.90	0.001129	8,782,002.63	169,241
Canada	34,342,780	663,090,643	19.31	0.30	10,302,834	0.75	14.48	149,195,395	2,561,836,156	178,812,108.30	1,105,150.66	0.012082	93,955,795.19	1,810,649
Germany	81,797,673	938,961,292	11.48	0.30	24,539,302	0.75	8.61	211,266,291	2,773,102,447	203,351,410.20	2,632,249.12	0.028778	223,784,021.31	4,312,607
New Caledonia	254,000	4,335,849	17.07	0.30	76,200	0.75	12.80	975,566	2,774,078,013	203,427,610.20	8,173.72	0.000089	694,899.25	13,392
Estonia	1,327,439	21,906,050	16.50	0.30	398,232	0.75	12.38	4,928,861	2,779,006,874	203,825,841.90	42,716.99	0.000467	3,631,639.22	69,986
Faroe Islands	48,492	772,312	15.93	0.30	14,548	0.75	11.94	173,770	2,779,180,644	203,840,389.50	1,560.47	0.000017	132,665.57	2,557
China	1,340,000,000	9,787,164,958	7.30	0.20	268,000,000	0.75	5.48	1,468,074,744	4,247,255,388	471,840,389.50	43,121,200.00	0.471439	3,666,003,904.05	70,648,620
									4,247,255,388	471,840,389.50	91,467,182.11		7,776,199,334.16	149,857,384

Gtons from Individuals	4,247,255,388		
Gtons from Businesses	3,752,744,612	<at 48% participation rate	https://www.smefinanceforum.org/sites/default/files/analysis%20note.pdf
Total Gtons	8,000,000,000	<GAME WON	http://coolclimate.berkeley.edu/business-calculator
Max Participation from SME's	71,931,545	<at 48% participation rate	https://quickbooks.intuit.com/r/money/how-does-your-revenue-stack-up-to-other-small-businesses/
Participation from Individuals	471,840,390		https://www.sba.gov/advocacy/firm-size-data
Max Total Participation	543,771,934		https://www.sba.gov/sites/default/files/advocacy/2018-Small-Business-Profiles-US.pdf
			https://www.sba.gov/advocacy/2018-small-business-profiles-states-and-territories
			http://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Number_of_enterprises,_persons_employed_and_gross_value_added_(GVA)_and_the_share_of_SMEs,_2012.png

Market Indicators

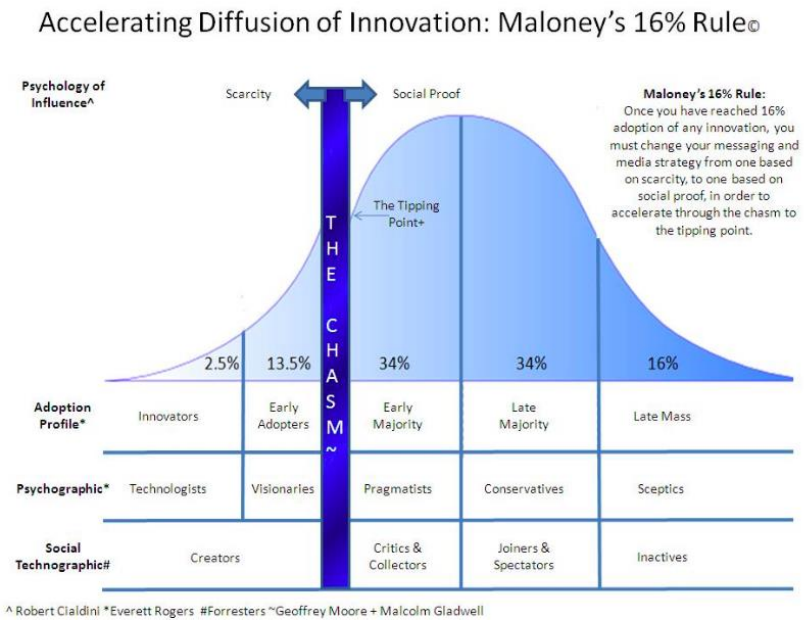
Yale's "Six Americas" summary[25] of American attitudes about climate change distinguishes two groups that share the highest levels of concern – the "Alarmed" and the "Concerned." According to Yale, "The Alarmed are fully convinced of the reality and seriousness of climate change and are already taking individual, consumer, and political action to address it. The Concerned are also convinced that global warming is happening and a serious problem, but have not yet engaged the issue personally." These are: 1) people who would take action if they knew what to do and the impact it would make, and 2) people who would take action if it were made easy and accessible.



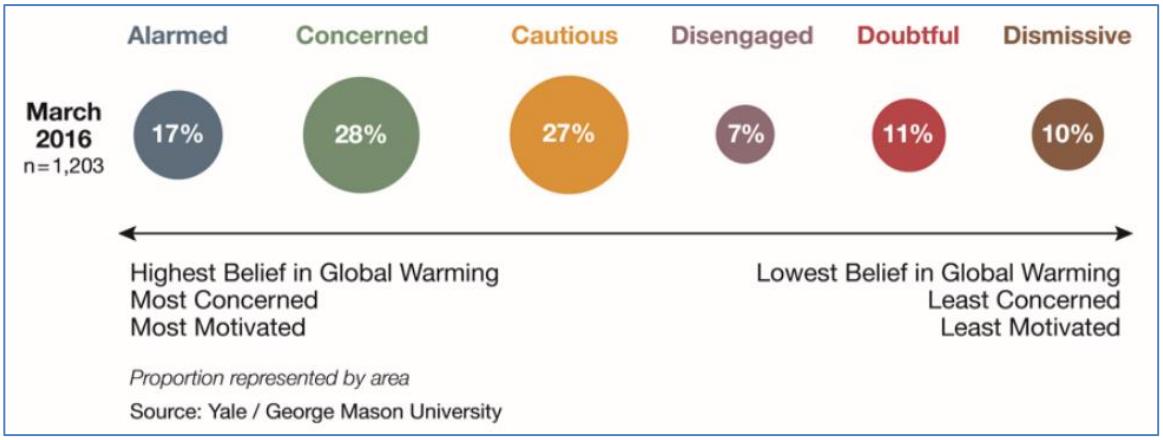
Rogers Innovation Adoption Curve[26] is a widely-used model for technology adoption that shows the adoption of technology as a bell curve, with 16% of the market being made of of "early adopters" and the "early majority." Theorists that followed went futher to show an action gap between that 16% and the "early majority."[27]

[25] http://climatecommunication.yale.edu/about/projects/global-warmings-six-americas/
[26] http://www.ou.edu/deptcomm/dodjcc/groups/99A2/theories.htm

[27] https://innovateordie.com.au/2010/05/10/the-secret-to-accelerating-diffusion-of-innovation-the-16-rule-explained/



We see strong parallels between the behavior shown in Yale's "Six Americas" and this adoption curve. We see the "concerned" as equivalent to that "early majority." What's more, the perception of climate change is shifting, as you can see by comparing data collected in March of 2016 with that in march of 2018.



The market for climate solutions is expanding rapidly. A recent study from the University of Texas at Austin[28] shows that 54% of Republicans and 90% of Democrats believe climate change is occurring. A 2016 Gallup poll shows that concern for global warming is at an eight-year high at 64%[29]. That's up from 55% just last year. A study conducted by Pew Research[30] indicates a high level of international concern as well. In 19 of 40 countries surveyed, people identified climate change as the top global threat. The market is ripe for activating the early majority.

[28] http://www.utenergypoll.com/
[29] http://www.gallup.com/poll/190010/concern-global-warming-eight-year-high.aspx
[30] http://www.pewresearch.org/fact-tank/2016/04/18/what-the-world-thinks-about-climate-change-in-7-charts/