The Annotated "Take AIM at Climate Change"

Verse 3
Singer: "OK, I get it, but give me some credit,
So the world needs rescue, what can I do?"[i]

MC: Just one small positive act, and then another
And then add them all together, one after the other[ii],

C'mon, you know the drill, it's about conservation[iii]
Using only what you need, and making sure that you're not wasting[iv]
Lots of information can be found on the web[v]
So educate your head and don't forget to let your knowledge spread…[vi]

Singer: "Is that all?"

MC: Not even close, that's not the end of it,
But a million small things can produce immense benefits[vii]
Any way you call it, there's no single way to solve it,[viii]
We gotta have involvement, before the Earth becomes insolvent.

CHORUS:
ADAPT… to a new situation…[ix]
INNOVATE… use your imagination…[x]
MITIGATE… we've got to try…[xi]
To stop global warming
We've got to aim high.

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1. To find a digest of the many things that individuals, families, students, office-mates, neighbors can do, and links to lists of lots more options, please visit: http://polar-palooza.com/whatyoucando
2. It's a pretty amazing statistic but individual American consumers make decisions that affect well over a third of all US carbon emissions, which is more than any nation on Earth, except one. "U.S. households account for about 38 percent of national carbon emissions through their direct actions, *a level of emissions greater than that of any entire country except China, and larger than the entire U.S. industrial sector*." The researchers who did this study (Gardner and Stern, *Short List*, in ENVIRONMENT Magazine, September-October, 2008, http://www.environmentmagazine.org/Archives/Back%20Issues/September-October%202008/gardner-

stern-full.html) continue, “By changing their selection and use of household and motor vehicle technologies, without waiting for new technologies to appear, making major economic sacrifices, or losing a sense of well-being, households can reduce energy consumption by almost 30 percent – about 11 percent of total U.S. consumption.” And that does mean, as Tommy raps, “A million small things can produce immense benefits.” Properly inflating the family car’s tires improves gas mileage by 3%. Recycling 20 glass bottle saves 2 pounds of carbon. Setting thermostats 2 degrees higher in summer and lower in winter saves 350 pounds of CO_2 emissions per year. Bottom line – if the U.S. emits approximately 20% of the world’s carbon dioxide, then activities within the direct and substantial control of individual Americans account for more than *six and one half percent* of *total global emissions*.

3. According to a recent study (“Making Green Products Grow” by McKinsey, a business consulting firm), more than 1/3 of Americans surveyed wanted to do something to address climate change. But they were mostly unaware of the top three most effective actions they could take, which were: (1) drive a more fuel efficient car; (2) insulate their homes, and (3) eat less meat. Instead, most people surveyed said “recycling” was the most important. In reality, young people don’t choose the family automobile, or make decisions about retrofitting houses, so recycling (see below), turning off lights, unplugging appliances – including computers, game consoles and cell phone chargers – when not in use are still perfectly valid actions. (And perhaps a few less hamburgers and a few more locally-grown veggies might benefit planetary as well as personal health. (See also “What what I eat” in Verse 4.) A *New Scientist* article claims that producing “A kilogram of beef is responsible for more greenhouse gas emissions and other pollution than driving for 3 hours while leaving all the lights on back home.” (http://www.newscientist.com/article/mg19526134.500) And in reality individuals – at least those of voting age – can do as much or more as McKinsey’s top three individual actions by taking collective steps – electing candidates for local, state and national office who understand the science of climate change and who are prepared to set national policy to address the issue.
4. “Reduce, re-use, recycle…” The phrase is a green mantra from previous decades, so often repeated that it may no longer sound important or impressive. A columnist for the Natural Resources Defense Council took a fresh look at the 3 R’s and found they had continuing utility: here’s what Sheryl Eisenberg wrote: “ ‘Reduce’ means using fewer resources in the first place. This is the most effective of the three R’s and the place to begin …When you shop, shop differently. Look for things that will last – things that are not just durable and well-made, but useful and beautiful enough to please you for a long time. The extra money you spend on their acquisition will be offset by the money you do not spend replacing them. Don’t chase the latest fashions. They will age the fastest …When you make a purchase, find out how to keep the item in shape. Then, maintain it accordingly and repair it when necessary.

5. ‘Reuse’ Before you recycle or dispose of anything, consider whether it has life left in it. A jam jar can store leftovers. Food scraps can become compost. An old shirt can become a pajama top. An opened envelope can become a shopping list. A magazine can be shared. DVDs can be traded. A dishwasher can be repaired. A computer can be upgraded. A car can be resold. A cell phone can be donated. Returnable bottles can be, well... returned.

6. ‘Recycle’ Recycling is the ‘R’ that has caught on the best. Partly, this is because there are so many curbside recycling programs today (8,660 as of 2006, according to the EPA), which makes recycling so darned easy.” (for the full article, http://www.nrdc.org/thisgreenlife/0802.asp)

7. Thanks to 350.org for permission to use their dynamic animation in "Take AIM…" (350 parts per million of carbon dioxide is the level which NASA climate scientist, James Hansen, has also endorsed, in his role as an individual citizen not a government spokesperson, as a target that would stabilize Earth's changing climate.) See the http://350.org website for US and international actions, blogs from Bill McKibben – one of the first and most influential environmental authors with "The End of Nature" – and much more.
8. For authoritative climate information, with articles and commentary posted by working climate researchers, visit: http://realclimate.org. To contribute thoughts to an unusually intelligent, carefully moderated discussion forum (with every posting reviewed by *New York Times* environment reporter, Andy Revkin), check out: http://dotearth.blogs.nytimes.com/ To see new images of the Poles (and just about every other part of the planet) together with well-written articles explaining the science, check out http://earthobservatory.nasa.gov
9. "If every American…" Let's fill in the blanks from some authoritative sources:
   "If every American home replaced just one light bulb with an ENERGY STAR qualified bulb, we would save enough energy to light more than 3 million homes for a year, more than $600 million in annual energy costs, and prevent greenhouse gases equivalent to the emissions of more than 800,000 cars." (http://www.energystar.gov/index.cfm?c=cfls.pr_cfls)
   "…if every American spent 30 minutes a day walking or cycling instead of driving, we would collectively cut carbon emissions by 64 million tons and shed more than three billion pounds of excess flab." (http://www.nytimes.com/2008/04/20/magazine/20Act-t.html?pagewanted=2) The same article cited a British study that suggested that for every minute you walk, you live about three minutes longer!
   "If every American recycled his or her newspaper just one day a week, we would save about 36 million trees a year. You can save a tree for every four feet of paper you recycle. It takes half as much energy to make recycled newspaper as it takes to make fresh newsprint from trees." (http://www.energyquest.ca.gov/saving_energy/index.html)
   And, rather more provocatively, "If every American drove a 70-mile-per-gallon hybrid Honda Insight instead of a gas-guzzling sport utility vehicle, we could stop importing oil tomorrow…" (http://www.grist.org/comments/soapbox/2001/01/26/motavalli-sucks/)
10. See the chorus for an explanation of "A_I_M" – all those strategies will be needed, a portfolio of choices for individuals and communities. We need lots of people and lots of different approaches – all working together – to address climate change.
11. The rap's title, "Take AIM at Climate Change" includes all three strategies, with the "A" standing for "Adapt." Some increase in temperature is inevitable, given rising levels of CO_2. Therefore we have to *adapt*. The CCSP defines "Adaptation" as "Initiatives and measures to reduce the vulnerability of natural and human systems against actual or expected climate change effects." That may mean planting more drought-resistant crops, moving away from coastal areas that are eroding as permafrost melts (such as in Alaska) or investing in stronger levees, as in cities such as New Orleans. The video illustrating "Adapt" shows the effects of permafrost melting – over just one month – on the coast of Alaska, at Drew Point. (http://cires.colorado.edu/science/features/thawingalaska/, and follow the link to the YouTube video.)
12. "Innovation" will also be required – making solar power more efficient and economical, designing wind turbines that are strong enough to be placed in the ocean where wind energy is more consistently available, inventing carbon sequestration technologies so that "clean coal" can become a reality and not just a slogan or a dream. The video for "Innovate" is of a pilot project by Florida

Atlantic University, to put underwater turbines in the Gulf Stream to see how much power might be generated. There are already similar projects in New York's East River and in Europe. (http://coet.fau.edu/?p=pilot) As with every new technology, there are lots of questions of cost, efficiency and environmental impacts to be resolved. But many think that sustainable energy can be, indeed must be, the "next big thing", as computers were in the past – where good new ideas will make millions for inventors and benefit also millions of people.

13. Lastly there's "Mitigation", which the CCSP defines as "Human interventions to reduce the sources of greenhouse gases or enhance the sinks that remove them from the atmosphere." For more on that, see "What can I do?" above. "Mitigate" is illustrated by what's become an increasingly common sight in American homes, a compact fluorescent bulb. CFLs (as they're called) are something of a success story, on sale at mass retailers like Walmart, achieving something like 20% market share. (http://yosemite.epa.gov/opa/admpress.nsf/7ebdf4d0b217978b852573590040443a/970f05bf0bc5d9aa852573d10055b38d!OpenDocument) But much larger scale approaches to cut down on emissions will be required, and though promising, none of them are yet "at scale." One promising approach is "carbon sequestration", burying CO_2 instead of releasing it to the atmosphere at oil wells and power plants. Statoil, the Norwegian state oil company, has perhaps the most advanced test facility: http://www.carbonsequestration.us/News&Projects/htm/Statoil-Sleipner-2001.html And the US Department of Energy has several studies under way: http://www.fe.doe.gov/sequestration/index.html