

## Tax policy implications for a Sustainable, Green, Steady State Economy for the 21st Century

*slow growth and relocalized monetary growth versus velocity vectorized fast growth*

"Tax Policy is Economic Policy!"

[Jack Lindblad](#), in his public comment for the [Commission on the 21st Century Economy](#), posted under "Public Comments" - down the page, [here](#), draws together the economic and ecological collapses' connectedness to urge a steady state economy and tax policy based on relocalization and bio-regional determinism to retire endemic deficit spending and adapt to, mitigate, and restore ecological services from climate change by reducing emissions 70% by 2015 for a less than 2 °C rise from 2000 levels to avoid escalating, horrific effects of deepening social, economic and ecological collapse.

Permission is given to reproduce in whole or in part with attribution of authorship and a link to this article. [Jack Lindblad](#) vied for the State Assembly 39th District seat, was the only Green candidate in California on the ballot for statewide Legislative office in 2008, is gearing up for the 2010 run, and lives in the San Fernando Valley. He anchors his award-winning community planning and architecture practice with an urban design and healthcare facility emphasis in the San Fernando Valley with his work being recognized for excellence and innovation. Lindblad campaigns on a Green-values, seven plank platform emphasizing stopping gentrification, more parks and transition to a carbon-neutral, green jobs economy basing development on bio-regional determinism, not developers, and has supported various community grass-root efforts, including providing support to forming neighborhood councils, co-authoring sustainable community plans, and revitalizing the Tujunga-Pacoima Watershed.

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**High-carbon growth - business as usual - will by mid-century have taken greenhouse gas concentrations to a point where a major climate disaster is very likely. We risk a transformation of the planet so radical that it would involve huge population movements and widespread conflict. Put simply, high-carbon growth will choke off growth.**

This sustainable growth strategy is crucial not just to end the recession but as a model for the whole world in the decades to come:

The next few years present a great opportunity to lay the foundations of a new form of growth that can transform our economies and societies. Let us grow out of this recession in a way that both reduces risks for our planet and sparks off a wave of new investment which will create a more secure, cleaner and more attractive economy for all of us. And **in so doing, we shall demonstrate for all, particularly the developing world, that low-carbon growth is not only possible, but that it can also be a productive and efficient route to overcome world poverty.**

from [Nicholas Stern: Recession is the time to build a low-carbon future](#)

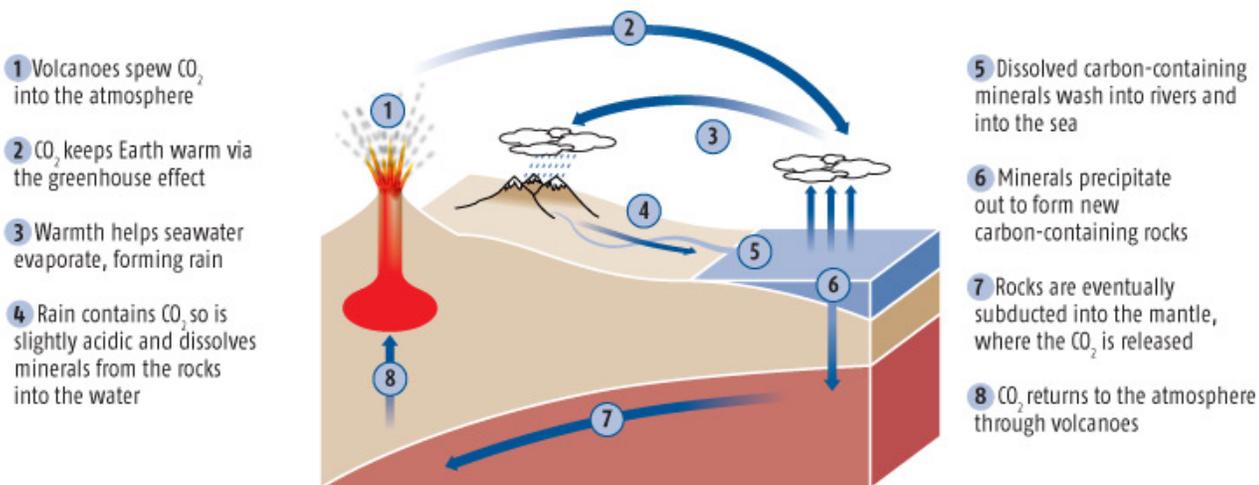
[George Monbiot has written that even] Lord Stern made it too easy: he appears to have underestimated the costs of mitigation. As the professor of energy policy Dieter Helm has shown, Stern's assumption that our consumption can continue to grow while our emissions fall is implausible. To have any hope of making substantial cuts we have both to reduce our consumption and transfer resources to countries like China to pay for the switch to low carbon technologies. As Helm notes, "there is not much in the study of human nature -- and indeed human biology -- to give support to the optimist."

But we cannot abandon mitigation unless we have a better option. We don't. If you think our attempts to prevent emissions are futile, take a look at our efforts to adapt. Where Stern appears to be correct is in proposing that the costs of stopping climate breakdown, great as they would be, are far lower than the costs of living with it.

from [If we behave as if it's too late, then our prophecy is bound to come true](#)

### THE EARTH'S THERMOSTAT

Unlike Venus and Mars, which lost their water to runaway climate change, Earth has a handy thermostatic cycle built in



from [Unknown Earth: Why is Earth's climate so stable? \\* 24 September 2008 by Richard Lovett](#)

The Venus Syndrome looms ahead with continuing the growth economy's "business as usual".

The changes we make to the climate by burning fossil fuels could last millions of years but, after we've gone, Earth's underlying thermostat should be able to regain control. That is not guaranteed, however. Both Venus and Mars were habitable once. Perhaps we should heed their warning and take better care of the thermostat our planet has so generously provided.

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Nature adds 5% more global greenhouse gases (ghg) yearly and all of that is absorbed in the carbon cycle. Mankind adds twenty times more than Nature and the excess ghg stays in the atmosphere and increases the temperature. Science tells us that humans are forcing the natural carbon cycle by 20 times the amount that nature assimilates its own carbon dioxide contribution (5% of man-made CO<sub>2</sub>). Economic activity will be 400% higher by mid-century with those in China and India consuming on the level of the

US today. Yearly economic growth is pegged at 3%.

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Real wealth has no relationship with the non-productive gains realized from the financial bubble, now flattened. The global financial structure is not seen as returning anytime soon, according to George Soros and economist [James K. Galbraith](#).

Real wealth - defined.

Real wealth is measured in a steady-state, sustainable economy based on zero carbon emissions, reset to a CO2 neutral flux, economic activity reset to much lower levels of consumption and a redefinition of the global economy into a constellation of revitalized, relocalized communities based on bio-regional determinism, watersheds, and local access to necessities of life, education, culture, health care for all.

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What we need to determine is how to peg the level of economic activity to a carbon-neutral, steady-state economy - in which there is a cessation of greenhouse gas forcing beyond nature's self-regulating level - an economic level supported at 5% of current greenhouse gas production.

To approach tax policy for a steady state economy, we need qualitative metrics of economic output and growth as a function of carbon-neutral systems outcomes.

Today's growth economy needs to transition to a carbon-neutral, net-zero, defined by buildings, mass transportation, lowered overall extent of private transport, manufacturing plants and dwellings are designed not only to generate all the energy they use (to be self-sustaining) but to be indefinitely recyclable for all its components, to the maximum extent possible. Growth will come from making process flow efficient and cease from the greed of gaming the market.

Until carbon-neutral economic activity is a reality, we must drastically curtail consumption to achieve a carbon-neutral CO2 contribution within 4 years to keep CO2 from "business as usual" forcing at 1000 ppm of CO2 and 25°F temperature rise and catastrophic 250 foot sea-level rise making an ice-free planet inhabitable by 2100. (Dr. James Hansen)

There is a 1:1 relationship between 3% yearly economic growth and the 3% annual growth in [tonnage of] carbon dioxide in the atmosphere.

Fast and exorbitant profiteering predicated on exponential, never-ending economic growth from emitting exorbitant levels of global greenhouse gases are killing the carry-capacity required for the human species on the magnitudes of billions, let alone the fatal overshoot of the consumption demands of 9.2 billion humans, based a growth-oriented economy forecast for 2050.

California's size (if considered a nation) makes it the world's eighth-largest economy and twelfth-ranked contributor to global greenhouse gases. Linking economic policy to ecological policy here, will set a standard around the world.

As a mechanism of governance, tax policy is tied to Budgetary crisis in California. Present tax policy was structured from being bereft of the State's rightful non-militarized

Federal share, the bursting of social, political, financial, technological, housing, construction bubbles which decimated the California tax-base - all based on an obsolete, failed, consumption-fueled, corporate-greed driven unsustainable economic structure, systemically and inextricably tied to ever-escalating climate change from unchecked and unmitigated increases of high-entropy waste such as carbon dioxide (the primary greenhouse gas), mine slag and dirty water - from consuming low-entropy natural resources such as trees, fish and coal - produced by a problematic economic engine capable of only yielding polar glacial melt, desertification, lowered snow melt, drought, extreme weather and wildfires, dying forests, rising ocean levels, extinction of coral reefs, ocean acidification, growing ocean dead zones, plant and animal extinction, and human settlement dislocation, in turn relentlessly ratcheting up temperatures, looming water shortages in California from the 500-year drought plagued shriveling-up Colorado River and over-stressed ecological services throughout California. Tax policy to date, based on revenue, represents the "business-as-usual" endless quantification of the destruction of ecological services as a failed definition of wealth.

As if an afterthought, the growth economy is responsible for producing energy and for producing the large amount of goods, only some of which are essential and useful.

The objective is to keep consumption and spending under control. Taxation is integral to the task of governance meet the public need and provide for the common good. Tax policy can help redirect overconsumption to reward renewable, carbon-neutral technologies, doing more with less, restoration of ecological services. Its a case of Orwellian Doublethink to believe the present growth economy framework in which tax policy is formulated around the notions of progressivity and tax brackets is up to the task of meeting the public need to survive and be sustaining. Taxation can be considered to be a wealth redistribution scheme enabled by governance.

Taxation cannot remain focused on a system of non-productive growth where tremendous costs (deforestation, contaminated water tables, depleted ocean fisheries, ocean dead zones) are held "off the books." The true costs of "doing business" has to be accounted for and subtracted from the **Gross Domestic Product** (GDP). Taxation has to be applied to fossil fuel energy sources and sunseted via taxes on carbon while renewable energy frameworks are incentivized. Not only the yearly 3% growth in global greenhouse gas has to be cut, but [the overall yearly decrease has to approach 12% per year](#), a level that the Obama administration has claimed is not possible. The alternative (to allow greater than a 2 degree C temperature increase - with less than a 70% reduction in emissions by 2015) is not only 'not possible', its unthinkable. Transitioning to a steady steady economy is an imperative to accomplish the levels of these emission reductions.

The current regressive tax policy must be changed as part of the initiatives to transition to a renewable energy, livable wage, green jobs economy and to steer away from unregulated financial environments. Inflationary spiral on lower income workforce can be reduced by a phased elimination of state tax on wages and salary and sales tax compensated with a graduated tax rate on gross rents, gross business receipts and resource-based carbon taxes. [Hendrik Hertzberg](#), writing in the New Yorker has suggested a similar scheme and put it to the Obama administration. Resorting to a split roll assessment by redefining what constitutes a 'sale' of non-residential property for the purpose of flagging the property to be reassessed by the County Assessor and requiring

a mark-to-market for non-residential properties every ten years if no sale was made in the interim.

Unsustainable speculative urban sprawl, mansionification can be curbed through tax incentives by replacing tax on building improvements with tax on land. By doing so, transit-oriented, pedestrian friendly, mixed-use development, generating on-site renewable power and certified renewable energy credits is encouraged. The overall objective is to 'get off the grid' by achieving net-zero-energy performance.

Tax policy can be changed to close developer loopholes to increase public coffers. Single payer universal healthcare will save 30% over the current privatized structure. By removing the developer and corporate lobbyist influence over land-use planning decisions, neighborhood stakeholders and interests are represented. Taxation occurs with representation.

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True cost of fossil fuel based industries profiteering from war and oil consumption currently is "off the books" by adherence to the present greed-based growth economy that does not account for ecological service loss.

Treating ecological services as commodity to be endlessly consumed is considered a growth economy. A steady state economy tax policy must reward innovation, doing more with less, tax carbon, sunset fossil fuel dependency, reward reuse, repair, recycling, renovation, restoration and revitalization.

An urgent and immediate need exists to become a carbon-neutral economy.

"A steady state of carbon emissions has to be sustained at a level 70% lower than current levels to avoid the worst catastrophic effects of global warming. According to atmospheric chemist Paul Crutzen, "I would like to be optimistic that we'll survive, but I've got no good reason to be. In order to be safe, we would have to reduce our carbon emissions by 70 per cent by 2015. We are currently putting in 3 per cent more each year."

"Even so, the most terrifying prospect of a world warmed by 4 °C is that it may be impossible to return to anything resembling today's varied and abundant Earth. Worse still, most models agree that once there is a 4 °C rise, the juggernaut of warming will be unstoppable, and humanity's fate more uncertain than ever.

"The good news is that the survival of humankind itself is not at stake: the species could continue if only a couple of hundred individuals remained. But maintaining the current global population of nearly 7 billion, or more, is going to require serious planning.

Four degrees may not sound like much - after all, it is less than a typical temperature change between night and day. It might sound quite pleasant, like moving to Florida from Boston, say, or retiring from the UK to southern Spain. An average warming of the entire globe by 4 °C is a very different matter, however, and would render the planet unrecognisable from anything humans have ever experienced. Indeed, human activity has and will have such a great impact that some have proposed describing the time from the 18th century onward as a new geological era, marked by human activity. "It can be

considered the Anthropocene," says Nobel prizewinning atmospheric chemist Paul Crutzen of the Max Planck Institute for Chemistry in Mainz, Germany.

A 4 °C rise could easily occur. The 2007 report of the Intergovernmental Panel on Climate Change, whose conclusions are generally accepted as conservative, predicted a rise of anywhere between 2 °C and 6.4 °C this century. And in August 2008, Bob Watson, former chair of the IPCC, warned that the world should work on mitigation and adaptation strategies to "prepare for 4 °C of warming".

A key factor in how well we deal with a warmer world is how much time we have to adapt. When, and if, we get this hot depends not only on how much greenhouse gas we pump into the atmosphere and how quickly, but how sensitive the world's climate is to these gases. It also depends whether "tipping points" are reached, in which climate feedback mechanisms rapidly speed warming. According to models, we could cook the planet by 4 °C by 2100. Some scientists fear that we may get there as soon as 2050.

If this happens, the ramifications for life on Earth are so terrifying that many scientists contacted for this article preferred not to contemplate them, saying only that we should concentrate on reducing emissions to a level where such a rise is known only in nightmares."

from <http://www.newscientist.com/article/mg20126971.700-how-to-survive-the-coming-century.html>

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To offset the specter of continuing the growth economy, a Green Ten key value, Community-based Economics, defines **Sustainable Economics** and **Steady State Economics**, as advanced by Herman Daly, a pioneer in ecological economics.

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#### (IV.) **Sustainable Economics:**

**Community-centered, Steady State Economics** is a more humanized, environmentally responsible economic alternative founded upon our 10 Key Values and the sub-disciplines of **Steady State, Ecological and True Cost Economics**.

**Steady State Economics** retains capitalism's internal flexibility, allowing for both class diversity and individual opportunities to acquire wealth, but it reframes assumptions about the viability of infinite growth and unlimited resources as well as such "inevitable" as cyclic recessions and unemployment.

Prioritizing the community, real people, and their environment, so that they are on par with traditional measures of productivity and consumption. Our integrative approach models natural ecological systems' success (noting that ecology actually derives from economics), not only ending wanton, environmental destruction and poverty, but balancing competitive and cooperative qualities with individual and collective elements of our society, so that all may flourish.

Diverging from both orthodox free market and planned economies, our policies are

conservative insofar as they conserve limited resources, but progressive in implementing a future oriented society; they are antithetical to both Big Business and Big Government and irreducible to traditional left-right thinking. Our vision is a genuine third way that holistically combines the best features of other models with the practical diversity of our communities, worldly realities, and life's natural order, so that public sector and private enterprise, society and individual, all play interrelated, mutually supporting, and equally important roles in the larger political society, ecosphere, and eco(no)sphere.

### **Core Principles and the Measurement of Success:**

There are several fundamental principles and guidelines that give our economic vision form, including:

1. Assessing economic activity with **True Cost Pricing**, incorporating its environmental and social effects alongside financial costs in a comprehensive **Triple Bottom Line** accounting, and similarly measuring our real economic, social, and environmental health alongside traditional markers like GNP and GDP with such indicators as:

i. Index of **Sustainable Economic Welfare**

ii. **Infant Death Rates & Life Expectancy**

iii. **Genuine Progress Indicator** (GPI)

iv. **Family Stability and Education Levels**

v. **Total Goods and Services** (not just monetary)

vi. **Disparity of Wealth Accumulation**

2. Recognizing the **Limits of Growth & Resources** and creating a **Sustainable, Steady State Economy** that regards infinite growth as impossible and undesirable, and so strives for stable and robust markets, employment, production, and consumption rates in an economically efficient way through such principles as Recycle, Reuse, Reduce, Repair [and Restore].

3. Encouraging **[Relocalized] Regionalized Commerce and Local Self-sufficiency** of foods and basic necessities while working towards **Energy Independence, Carbon Neutrality, and the Peacetime Economy** in a strategic and holistic partnership between government, private enterprise, and our communities.

4. Choosing democracy over empire through **Fair Trade, not Free Trade**, repudiating military, political, and economic hegemony over other nations and peoples, and moderating the disparity of wealth so that it is in better accord with the natural diversity of personal industry, interest, and ability.

5. Ensuring **Diversity, Democracy, Decentralization, Plurality, and Equal Opportunity** in the public, private, and commons sectors of the economy, both with respect to individual participants and the kinds of structures, organizations, and businesses they may form.

6. **Emphasizing Stewardship and Fiduciary Responsibility in the Marketplace** over traditional ownership which only assumes the rewards associated with possession [and non-productive growth].

7. Advocating **Freedom and Innovation in the Humanized Marketplace** by limiting regulations and disincentives to economic activity only where the well-being of the environment, society, and community necessitates such, and generally emphasizing **Middle-sized Government** to accomplish this.

8. Following the **Precautionary Principle** (even while also promoting new research and developing a high technology economy), because our long term best interest lies in waiting for a scientific consensus about the dangers of specific new technologies before utilizing them; we should conservatively heed even a minority view calling for caution.

from Oregon Green Party (Eric Douglas)

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### **How We Measure Progress (real wealth)**

The GPI starts with the same personal consumption data that the GDP is based on, but then makes some crucial distinctions. It adjusts for factors such as income distribution, adds factors such as the value of household and volunteer work, forests, wetlands, agricultural lands, non renewable resources such as oil, minerals, rainforests, and subtracts factors such as the costs of deforestation, crime and pollution.

Because the GDP and the GPI are both measured in monetary terms, they can be compared on the same scale. Measurements that make up the GPI include:

#### **Income Distribution**

Both economic theory and common sense tell us that the poor benefit more from a given increase in their income than do the rich. Accordingly, the GPI rises when the poor receive a larger percentage of national income, and falls when their share decreases.

#### **Housework, Volunteering, and Higher Education**

Much of the most important work in society is done in household and community settings: childcare, home repairs, volunteer work, and so on. The GDP ignores these contributions because no money changes hands. The GPI includes the value of this work figured at the approximate cost of hiring someone to do it. The GPI also takes into account the non-market benefits associated with a more educated population.

#### **Crime**

Crime imposes large economic costs on individuals and society in the form of legal fees, medical expenses, damage to property, and the like. The GDP treats such expenses as additions to well-being. By contrast, the GPI subtracts the costs arising from crime.

#### **Resource Depletion**

If today's economic activity depletes the physical resource base available for tomorrow, then it is not creating well-being; rather, it is borrowing it from future generations. The GDP counts such borrowing as current income. The GPI, by contrast, counts the depletion or degradation of wetlands, forests, farmland, and nonrenewable minerals

(including oil) as a current cost.

### **Pollution**

The GDP often counts pollution as a double gain: Once when it is created, and then again when it is cleaned up. By contrast, the GPI subtracts the costs of air and water pollution as measured by actual damage to human health and the environment.

### **Long-Term Environmental Damage**

Climate change, ozone depletion, and nuclear waste management are long-term costs arising from the use of fossil fuels, chlorofluorocarbons, and atomic energy, respectively. These costs are unaccounted for in ordinary economic indicators. The GPI treats as costs the consumption of certain forms of energy and of ozone-depleting chemicals. It also assigns a cost to carbon emissions to account for the catastrophic economic, environmental, and social effects of global warming.

### **Changes in Leisure Time**

As a nation becomes wealthier, people should have more latitude to choose between work and free time for family or other activities. In recent years, however, the opposite has occurred. The GDP ignores this loss of free time, but the GPI treats leisure as most Americans do—as something of value. When leisure time increases, the GPI goes up; when Americans have less of it, the GPI goes down.

### **Defensive Expenditures**

The GDP counts as additions to well-being the money people spend to prevent erosion in their quality of life or to compensate for misfortunes of various kinds. Examples are the medical and repair bills from automobile accidents, commuting costs, and household expenditures on pollution control devices such as water filters. The GPI counts such "defensive" expenditures as most Americans do: as costs rather than as benefits.

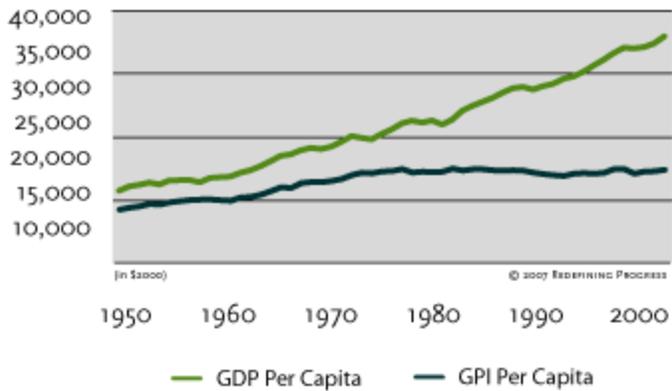
### **Lifespan of Consumer Durables & Public Infrastructure**

The GDP confuses the value provided by major consumer purchases (e.g., home appliances) with the amount Americans spend to buy them. This hides the loss in well-being that results when products wear out quickly. The GPI treats the money spent on capital items as a cost, and the value of the service they provide year after year as a benefit. This applies both to private capital items and to public infrastructure, such as highways.

### **Dependence on Foreign Assets**

If a nation allows its capital stock to decline, or if it finances consumption out of borrowed capital, it is living beyond its means. The GPI counts net additions to the capital stock as contributions to well-being, and treats money borrowed from abroad as reductions. If the borrowed money is used for investment, the negative effects are canceled out. But if the borrowed money is used to finance consumption, the GPI declines.

## GROSS PRODUCTION VS. GENUINE PROGRESS, 1950-2004



from [Genuine Progress Indicator](#)

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Why haven't we gone to the GPI metric already?

"In this Age of Deceit, it is a revolutionary act to tell the truth."

We are taught by growth economics that consumptive, endless growth is desirable and that steady state economics will not provide an adequate economic engine to satiate the population's consumption level. Orwellian doublethink is at work when society believes the intertwined runaway curves of consumption which define burgeoning economic activity and the runaway curve of the endlessly increasing level of Global Greenhouse Gas are acceptable and necessary for "our lifestyle" in the United States - which uses energy at 6 times the per capita of other countries in the world.

**Doublethink** is the act of simultaneously accepting two mutually contradictory beliefs. It is an integral concept of [George Orwell's dystopian](#) novel [Nineteen Eighty-Four](#).

The following quote by [F. Scott Fitzgerald](#), who died prior to the publication of *1984*, is notable in the context of Orwellian doublethink:

"The test of a first-rate [intelligence](#) is the ability to hold two opposed ideas in the mind at the same time, and still retain the ability to function." (\*) Also notable, in the same context, is [Aristotle's](#) observation that: *"It is the mark of an educated mind to be able to entertain a thought without accepting it"* <http://en.wikiquote.org/wiki/Aristotle#Un sourced>

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What does steady state economy look like and what may be its implications on tax policy?

Coupled to the same time line to avert the most catastrophic climate change-caused events has to be a conversion of California and the U.S. to a sustainable or "steady-state" economy. Two guiding principles: natural resources are not used faster than they can be replenished by the planet, and waste emissions are not deposited faster than they can be absorbed.

Scientists' roles define what levels of consumption and emission are sustainable - producing estimates that economists can work out how to achieve those limits, and how to encourage innovation in maximizing the utilization of available natural resources.

Two main mechanisms are employed. The first is a cap-and-trade system, under which companies can buy and sell emissions permits for reducing carbon emissions. The second is to change what is taxed. We are gradually abolishing Income tax (a very regressive tax) is shifted to taxing resources at the point at which they are removed from the biosphere: oil as it is pumped from the ground. This raises the price of those resources, and encourages people to use them sparingly.

The regressivity that poorer people experience by paying a higher proportion of their incomes on goods and services than the rich - is offset this by using revenues to fund benefits, programs and projects geared for those on the lower income levels.

Without economic growth to raise incomes, poverty is addressed by transitionally redistributing resources by setting upper limits for income inequality. The permitted range of incomes reflects and rewards real differences and contributions rather than just multiplying privilege. Plato thought it was a factor of 4. Universities, civil services and the military have always seemed to manage with a factor of 10 to 20, but in the US corporate sector saw factors over 500 up to 19,000 in AIG's case. The optimal overall range from a factor of 30 upwards to 100, so if the lowest salary in a company is \$10,000, the highest for a top manager is \$1 million. Eventually, we may try to bring this down to \$300,000.

Growth is allowed, so long as it doesn't exceed limits set by ecologists. Interest rates have therefore fallen very low, approaching zero. Though the rate of physical throughput of resources is limited, increases in efficiency and developments in technology are allowing us to get more and more out of the resources we have. This increases the value of the economy.

Introducing a carbon tax will make private vehicular transport prohibitively expensive and limit car trips. Balancing the greater need for mass transit are tax incentives to trigger huge investments in public transport, as well as in the technology required to run vehicles on renewable energy. Already electric cars are becoming much more affordable. Air travel's large carbon footprint can be reduced with reliance on virtual reality travel.

Disagreement over how much economic growth we will ultimately be able to achieve - ranges with optimists claiming technology will allow huge amounts of growth without increasing our impact on the planet to others pointing to sectors of the economy generally thought to be purely qualitative, such as information technology, actually involve significant use of physical resources - the raw materials required to make computers and displays, for example. Even people working in IT spend most of their income on physical goods such as cars, houses and holidays. Besides, for the growth we do achieve to benefit the poor, they are going to need clothing, shelter and food, not electronic music and internet recipes.

Another area that has will shift is finance. A steady-state economy will not support the bloated superstructure bubble of finance which is accustomed to expectations of future growth. Investment is reserved for replacement and qualitative improvement, and the enormous, endless pyramid of debt that was previously balanced on top of our economy has disappeared. The percentage of money deposited that banks are required to keep in reserve - will gradually rise. As a result, commercial lending will resume as banks cease

their reliance on income from financial intermediation and service charges. Investing and lending will be collateralized with deposits from savings.

Different kinds of goods will be produced. Paying the environmental costs of what we use makes natural resources more expensive, reflecting an accurate social cost. So making short-lived, disposable goods no longer makes economic sense - giving way to manufacturing what we need, and products built to last - so disposable consumer tech that has to be updated every six months is no longer sustained. New forms of ownership will emerge: rather than buying a car or carpet, you are likely to lease it from an owner who is responsible for maintaining it, and who will recycle it at the end of its useful life.

Making short-lived, disposable goods is no longer justified.

"This means that maintenance and repair - as opposed to production - are much more important sources of employment than ever before. So are science and technology. We have all kinds of opportunities there, from the government-funded ecologists and scientists working on values for concepts such as "carrying capacity" (the number of people Earth can sustain) or modelling the effects of rising sea levels, to the entrepreneurs developing renewable technologies. Without as much economic growth as before, we can't maintain full employment - but then, our old growth economy wasn't so good at doing that either. Instead, people work part time, generally as a co-owner of a business rather than as an employee. The whole pace of life is more relaxed. Incomes are lower but we are rich in something that many of us had never experienced before: time.

Completely free trade isn't feasible any more, of course, because we have to count many costs to the environment and the future that foreign firms in growth economies are allowed to ignore. So we allow regulated international trade under rules that compensate for those differences. As the number of countries committing to sustainability increases, however, we're forming a rapidly expanding club within which we can trade freely. Eventually we hope that club will encompass the whole world."

One of the toughest issues, politically, has been population. We know that we will have to stabilise our population - and that includes immigration rates as well as birth rate. We're not quite there yet, but we are compelled in that direction. This will push up the average age of the population, putting pressure on the viability of pension plans, but economists are tasked to set contributions at financially, socially and ecologically sustainable levels.

How will a steady state economy affect our quality of life? The outlook here is pretty good. During the growth economy, psychologists and economists have found correlation between absolute income and happiness extends only to a certain threshold. Once basic needs are satisfied, only relative income - how well off we are compared to our peers - influences how happy people say they are. This held for comparisons between rich and poor countries at a given time, and in comparing a single country before and after a significant growth in income. Abandoning economic growth will not mean a decline in total happiness.

referenced in [Life in a land without growth](#)

## Ten Point Steady State Economic Policy Summary

1. **Cap-auction-trade systems for basic resources.** Cap limits to biophysical scale according to source or sink constraint, whichever is more stringent. Auction captures scarcity rents for equitable redistribution. Trade allows efficient allocation to highest uses.
2. **Ecological tax reform**—shift tax base from value added (labor and capital) and on to “that to which value is added”, namely the entropic throughput of resources extracted from nature (depletion), through the economy, and back to nature (pollution). Internalizes external costs as well as raises revenue more equitably. Prices the scarce but previously unpriced contribution of nature.
3. **Limit the range of inequality in income distribution**—a minimum income and a maximum income. Without aggregate growth poverty reduction requires redistribution. Complete equality is unfair; unlimited inequality is unfair. Seek fair limits to inequality.
4. **Free up the length of the working day, week, and year**—allow greater option for leisure or personal work. Full-time external employment for all is hard to provide without growth.
5. **Re-regulate international commerce**—move away from free trade, free capital mobility and globalization, adopt compensating tariffs to protect efficient national policies of cost internalization from standards-lowering competition from other countries.
6. **Downgrade the IMF-WB-WTO** to something like Keynes’ plan for a multilateral payments clearing union, charging penalty rates on surplus as well as deficit balances—seek balance on current account, avoid large capital transfers and foreign debts.
7. **Move to 100% reserve requirements** instead of fractional reserve banking. Put control of money supply and seigniorage in hands of the government rather than private banks.
8. **Enclose the remaining commons of rival natural capital in public trusts**, and price it, while freeing from private enclosure and prices the non rival commonwealth of knowledge and information. Stop treating the scarce as if it were non scarce, and the non scarce as if it were scarce.
9. **Stabilize population.** Work toward a balance in which births plus immigrants equals deaths plus out-migrants.
10. **Reform national accounts**—separate GDP into a cost account and a benefits account. Compare them at the margin, stop growing when marginal costs equal marginal benefits. Never add the two accounts.

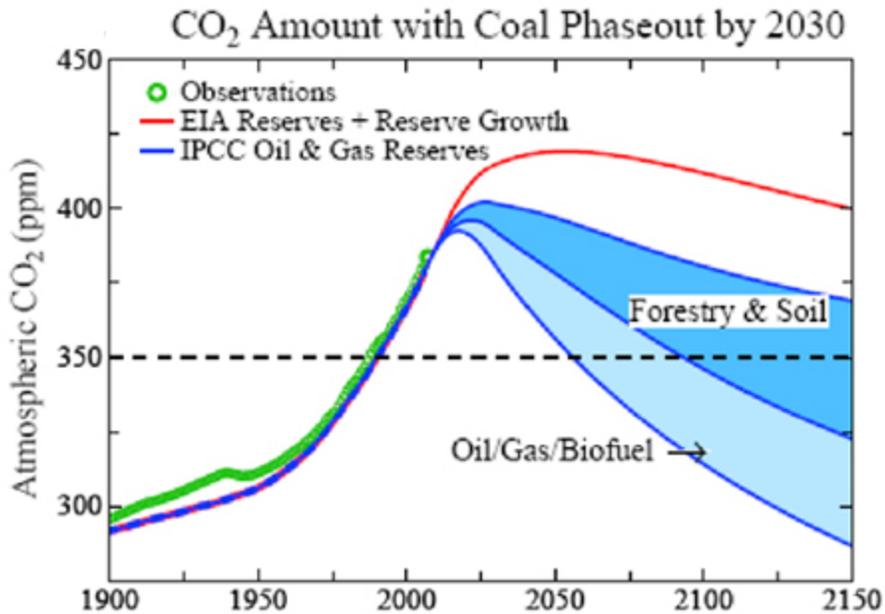
### [Herman Daly: Towards A Steady-State Economy](#)

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"The idea of moving to a steady-state economy will appear radical to many, perhaps politically impossible. But the alternative, a macro-economy that is structurally required to grow in scale beyond the biophysical limits of the Earth, is an absurdity, and heading for the ultimate crash. Before we reach that radical physical limit, we are already encountering the economic limit at which benefits of extra growth are increasingly outweighed by the costs."

from [Economics blind spot is a disaster for the planet - 15 October 2008 by Herman Daly](#)

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"According to the study, coal is the largest source of atmospheric CO<sub>2</sub> and the one that would be most practical to eliminate. Oil resources already may be about half depleted, depending upon the magnitude of undiscovered reserves, and it is still not practical to capture CO<sub>2</sub> emerging from vehicle tailpipes, the way it can be with coal-burning facilities, note the scientists. Coal, on the other hand, has larger reserves, and the authors conclude that "the only realistic way to sharply curtail CO<sub>2</sub> emissions is phase out coal use except where CO<sub>2</sub> is captured and sequestered."

In their model, with coal emissions phased out between 2010 and 2030, atmospheric CO<sub>2</sub> would peak at 400-425 ppm and then slowly decline. The authors maintain that the peak CO<sub>2</sub> level reached would depend on the accuracy of oil and gas reserve estimates and whether the most difficult to extract oil and gas is left in the ground.

The authors suggest that reforestation of degraded land and improved agricultural practices that retain soil carbon could lower atmospheric CO<sub>2</sub> by as much as 50 ppm. They also dismiss the notion of "geo-engineering" solutions, noting that the price of artificially removing 50 ppm of CO<sub>2</sub> from the air would be about \$20 trillion.

While they note the task of moving toward an era beyond fossil fuels is Herculean, the authors conclude that it is feasible when compared with the efforts that went into World War II and that "the greatest danger is continued ignorance and denial, which could make tragic consequences unavoidable."

"There is a bright side to this conclusion" said lead author James Hansen of Columbia University, "Following a path that leads to a lower CO<sub>2</sub> amount, we can alleviate a number of problems that had begun to seem inevitable, such as increased storm intensities, expanded desertification, loss of coral reefs, and loss of mountain glaciers that supply fresh water to hundreds of millions of people."

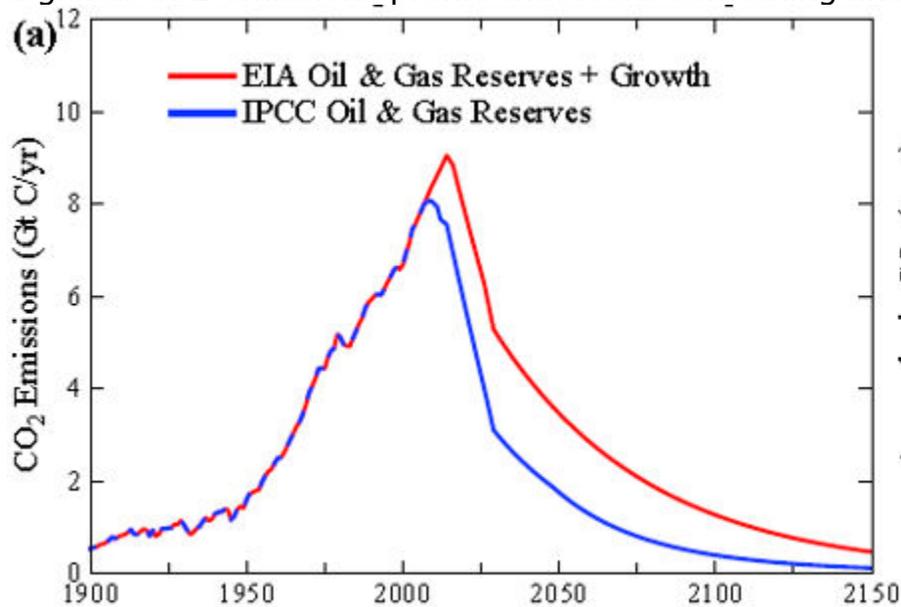
from [Revised Theory Suggests Carbon Dioxide Levels Already in Danger Zone](#)

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We *can* avoid multimeter sea level rise, the loss of the inland glaciers that provide water to a billion people, rapid expansion of the subtropical deserts, and mass extinctions — each of which is all-but inevitable on our current path of unrestrained greenhouse gas emissions.

**The not-so-good news:** We will probably need an ultimate target of 350 ppm (or lower) for atmospheric carbon dioxide — if you accept the analysis of ten leading climate scientists from around the world.

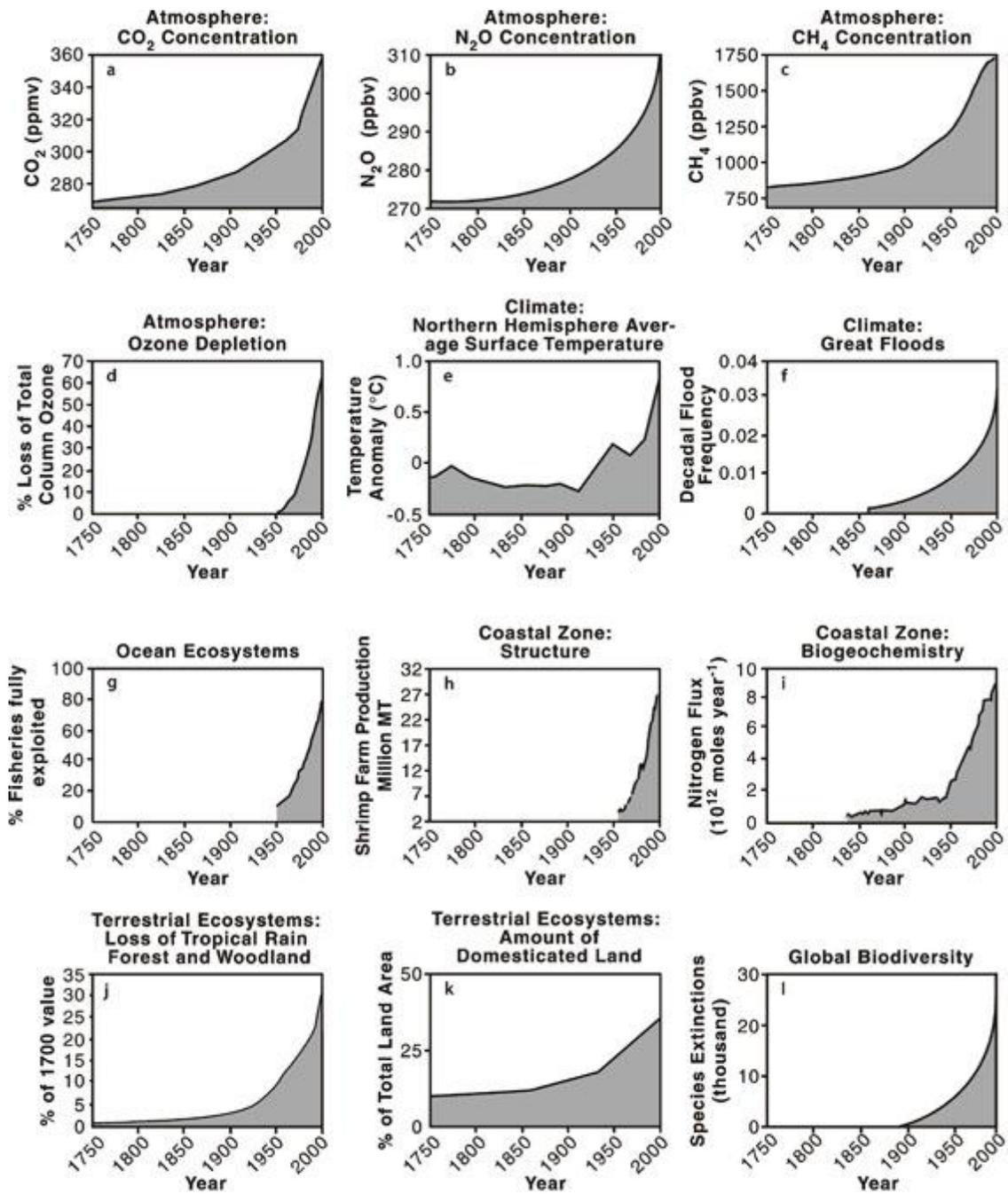
And yes, the authors of "[Target Atmospheric CO2: Where Should Humanity Aim?](#)" in *The Open Atmospheric Science Journal* are painfully aware we're already at 385 ppm and rising 2 ppm a year. That is why they propose the self-described "Herculean" task of phasing out coal use that does not capture CO2 "over the next 20-25." And that requires a global CO2 emissions profile that looks something like this:

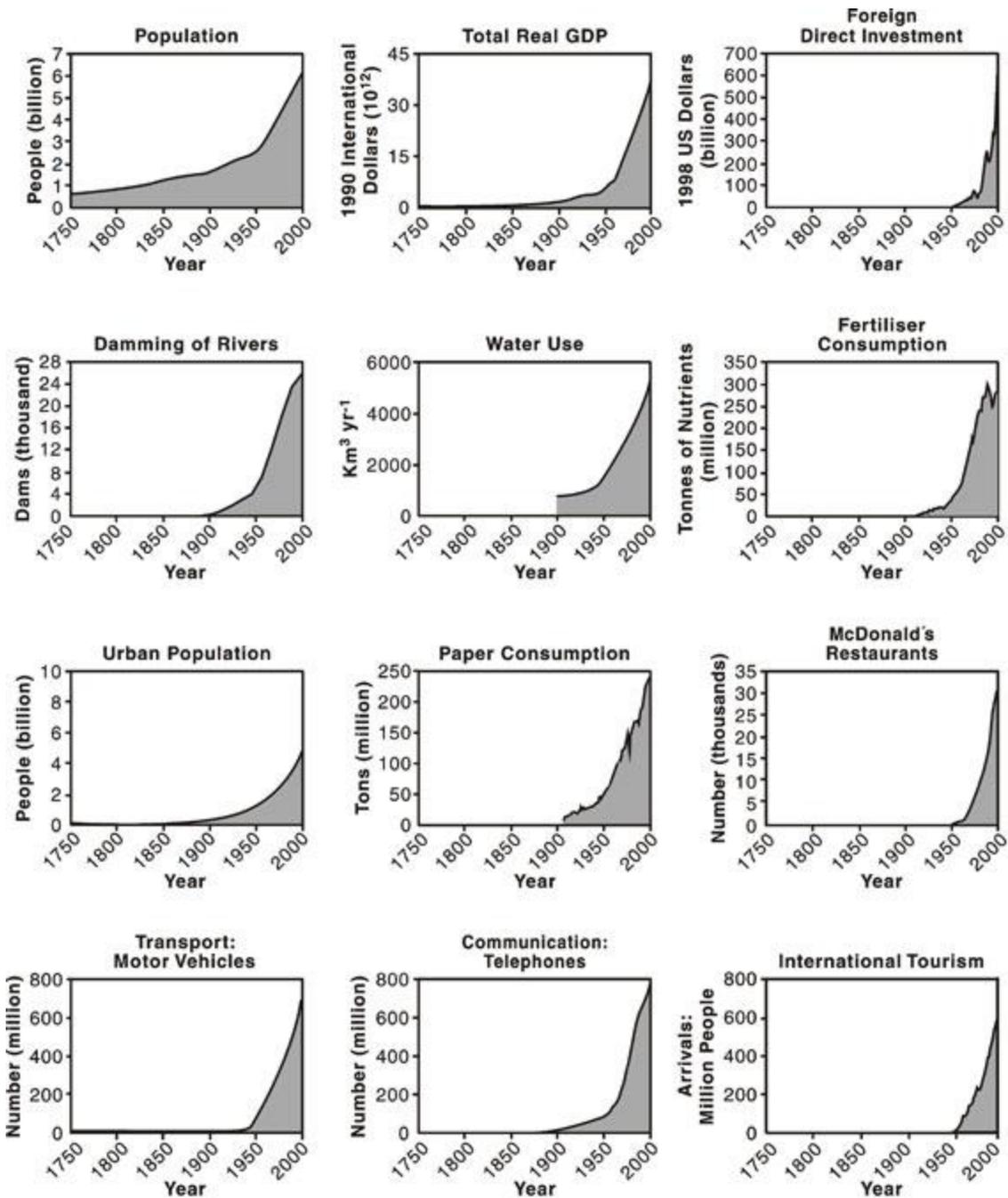


[Note to Hansen et al: Big pet peeve — I think you confuse the general reader by labeling your y-axis "CO2 Emissions" while expressing the units in billion metric tons of **carbon**. This helps foster errors in the media and elsewhere (see "[The biggest source of mistakes: C vs. CO2](#)").]

Actually, even the ultra-sharp emissions cuts depicted in the figure won't do the trick. We would still need "reforestation of degraded land and improved agricultural practices that retain soil carbon" (aka [biochar](#) to the rescue) to "lower atmospheric CO2 by as much as 50 ppm."

**More not-so-good news:** That kind of emission reduction isn't going to happen, not even under President Obama, not even close. Heck, I doubt it would happen under a President Hansen. [We just are not going to see 350 ppm this century](#). Unfortunately, the authors "infer from the Cenozoic data that CO2 was the dominant Cenozoic forcing, that CO2 was only ~450 ppm when Antarctica glaciated, and that glaciation is reversible." That is, if we stabilize at 450 ppm (or higher) we risk returning the planet to conditions when it was largely ice free, when [sea levels were higher by 70 meters](#) — more than 200 feet! Yet, "Equilibrium sea level rise for today's 385 ppm CO2 is at least several meters, judging from paleoclimate history."





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from [The facts about overconsumption](#)

These twenty-four graphs reflect the world economic growth of twenty-fold since 1900, at the yearly increase of 3% - projected out to 2050 - matching the projected global greenhouse gas 3% yearly growth, by 2050, when the world economy is forecast to be 400% larger than today's economy.

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The increasing rates of change in human activity since the beginning of the Industrial Revolution. Significant increases in rates of change occur around the 1950s in each case, and illustrate how the past 50 years have been a period of dramatic and unprecedented change in human history (US Bureau of the Census 2000; Nordhaus 1997; World Bank 2002; World Commission on Dams 2000; Shiklomanov 1990; International Fertilizer Industry Association 2002; UN Centre for Human Settlements 2001; Pulp and Paper

International 1993; McDonalds 2002; UNEP 2000; Canning 2001; World Tourism Organization 2001).

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[Nicholas Stern](#) in Copenhagen argued that the current economic depression gives the world a unique, unrepeatable opportunity to tackle climate change and poverty. The resources that we need to transform the global economy, he explained – raw materials, skilled labour and industrial capacity – are now far more available, and at a far lower cost, than they were during the boom years, and we should use them.

Some may be dismayed at his prediction that the economy will remain depressed for two, three or more years. But seen another way, this gives us longer to make the profound changes that are needed before economic recovery takes off once again – and to make that recovery genuinely sustainable, from both an environmental and an economic perspective.

One thing we do not need is an early recovery which raises demand for fossil energy, creating new spikes in the price of oil, gas and coal, so sowing the seeds of its own destruction. For the high price of fossil fuels was surely one of the triggers that created this global depression in the first place. That is why we need to bring about huge investments in [renewable energy](#) technologies and the associated infrastructure – such as a European supergrid that even stretches across the Mediterranean to include the huge solar power resources of North Africa.

Not to forget energy efficiency and conservation: making our homes, offices, industries and transport systems more frugal in their energy demands. In this way when the recovery comes, we will have the clean, green energy to supply it, and lower demand to avoid pushing up fossil fuel prices. And in the meanwhile we will have created millions of jobs in the new green industries, civil engineering and construction, putting skilled but idle hands to productive use.

What we lack at present is a mechanism to bring this about, and this will be [something for the G20 to consider](#) carefully when they meet in London in April. First the G20 must recognise the overwhelming scientific truth emerging from this conference – that continuing with business as usual is likely to create a planet 5C warmer than today, with stark consequences for all of us – or at least those of us who survive. As [John Schellhuber](#), climate adviser to Angela Merkel and Manuel Barroso warned, a 5C world may have a human carrying capacity of just 1 billion people. That would represent only about a tenth of most future population projections.

But what to do about it? The obvious answer is to create a global "carbon fund" with sufficient resources to drive the necessary changes forward. And the only clear way to fund it is from the sale of emissions permits, whether under a carbon tax as advocated by [William Nordhaus](#), or under a cap, auction, trade system as preferred by Stern. At a price of just \$30 per tonne of CO<sub>2</sub>, the world could raise about \$1tn per year to invest into solving the problems of climate change – paying countries to conserve their forests and peatlands, financing a renewable energy revolution backed by serious efficiency and conservation measures, and funding necessary adaptation in countries facing the multiple climate-related threats of drought, flood, storm and disease. All with a particular emphasis on meeting the needs of developing nations.

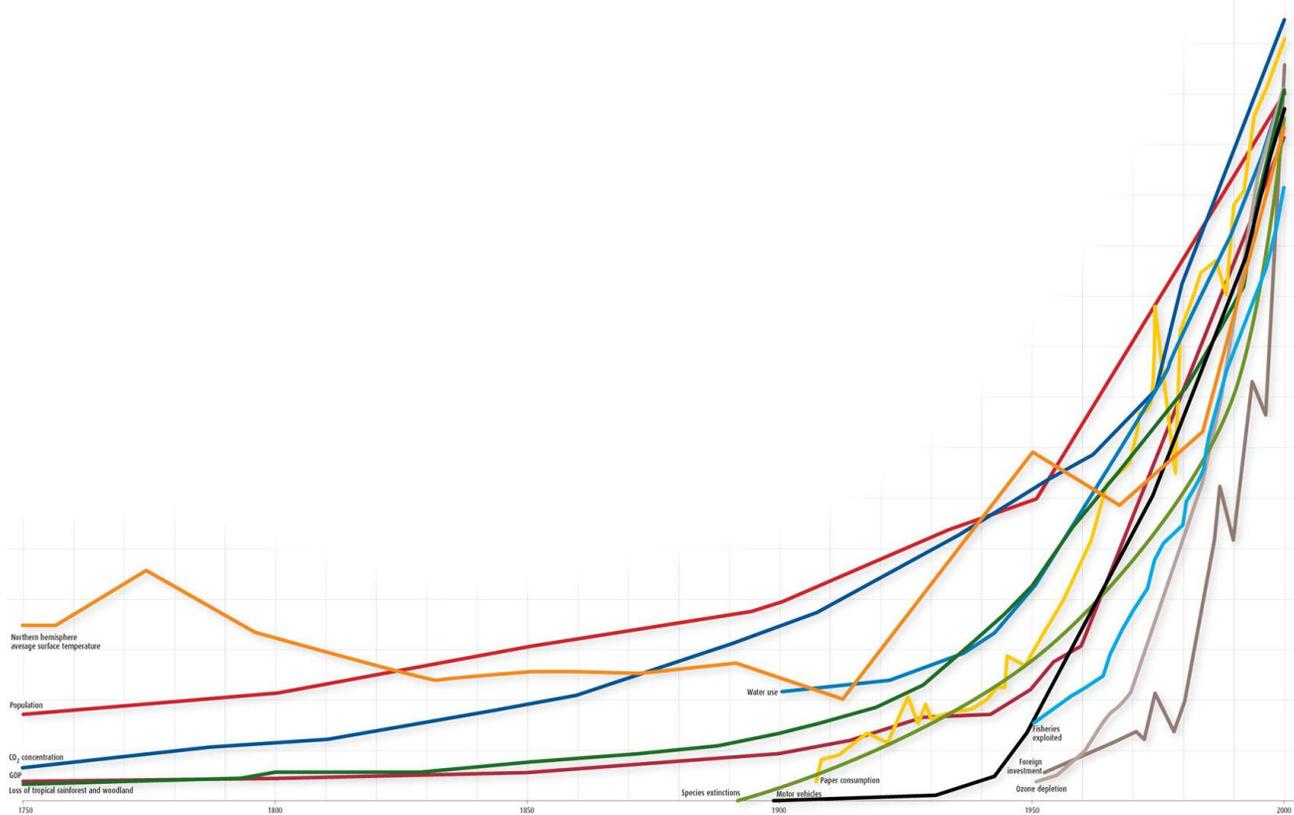
On top of the \$1tn that would be raised by the sale of carbon permits, the carbon price would put a secure, long term incentive in place for private investment in low carbon technology and innovation, and the funds available in this way could easily equal those raised directly – thus as much as \$2tn could be available. Stern's estimate is that we need to mobilise a sustained investment of 1-2% of world product, and our \$2tn is more like 3% of world product – in other words, this would be a more than sufficient sum to kick start our clean, green world economic revolution.

from [Green shoots before the recovery](#)

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Less economic yearly growth would result in less expenditure of oil and gas reserves in the world-wide effort to keep global temperature rise less than 2° C - increasingly viewed by scientists as not possible. Crossing the 2° C threshold will effect the complete melting of polar ice and Greenland - causing ocean-level rise and the dislocation of at least 10% of the world population.

from [Sea Level Rise Best Case Scenario: 50cm Rise, 10% of World Population Hit](#) and Projecting global climate change



"...graphs climbing across these pages ([see graph in detail](#), or [explore the data](#)) are a stark reminder of the crisis facing our planet. Consumption of resources is rising rapidly, biodiversity is plummeting and just about every measure shows humans affecting Earth on a vast scale. Most of us accept the need for a more sustainable way to live, by reducing carbon emissions, developing renewable technology and increasing energy efficiency.

But are these efforts to save the planet doomed? A growing band of experts are looking at figures like these and arguing that personal carbon virtue and collective

environmentalism are futile as long as our economic system is built on the assumption of growth. The science tells us that if we are serious about saving Earth, we must reshape our economy.

This, of course, is economic heresy. Growth to most economists is as essential as the air we breathe: it is, they claim, the only force capable of lifting the poor out of poverty, feeding the world's growing population, meeting the costs of rising public spending and stimulating technological development - not to mention funding increasingly expensive lifestyles. They see no limits to that growth, ever.

### **Economists see no limits to growth - ever**

In recent weeks it has become clear just how terrified governments are of anything that threatens growth, as they pour billions of public money into a failing financial system. Amid the confusion, any challenge to the growth dogma needs to be looked at very carefully. This one is built on a long-standing question: how do we square Earth's finite resources with the fact that as the economy grows, the amount of natural resources needed to sustain that activity must grow too? It has taken all of human history for the economy to reach its current size. On current form it will take just two decades to double."

"Just what a truly sustainable economy would look like is explored in "[Life in a land without growth](#)", when *New Scientist* uses Daly's blueprint to imagine life in a society that doesn't use up resources faster than the world can replace them. Expect tough decisions on wealth, tax, jobs and birth rates. But as Daly says, shifting from growth to development doesn't have to mean freezing in the dark under communist tyranny. Technological innovation would give us more and more from the resources we have, and as philosopher Kate Soper argues in "[Nothing to fear from curbing growth](#)", curbing our addiction to work and profits would in many ways improve our lives. It is a vision John Stuart Mill, one of the founders of classical economics, would have approved of. In his *Principles of Political Economy*, published in 1848, he predicted that once the work of economic growth was done, a "stationary" economy would emerge in which we could focus on human improvement: "There would be as much scope as ever for all kinds of mental culture, and moral and social progress... for improving the art of living and much more likelihood of it being improved, when minds cease to be engrossed by the art of getting on."

Today's economists dismiss such ideas as naive and Utopian, but with financial markets crashing, food prices spiralling, the world warming and peak oil approaching (or passed), they are becoming harder than ever to ignore."

from [Special report: How our economy is killing the Earth \\* 16 October 2008 \\* NewScientist Magazine issue 2678.](#)

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Proposed tax policy changes for a steady state economy:

- (1) the urgent need to adopt carbon taxes to replace income and sales taxes given the current state of the economy;
- (2) broadening the tax base and reducing tax rates;
- (3) shifting taxes from businesses (input taxes) to consumers, closing real estate

speculator loopholes and instituting a split-roll for non-commercial properties;

To facilitate these changes, the [Commission on the 21st Century Economy](#) ought to determine: how much interest does the state pay on its debt each year (and a chart showing it's change over the past 20 years), and information on how much of the interest is sent to bondholders outside the state and how much interest is paid to the Fortune 500 companies?

Additionally, what the single tax rate would be needed if we included all California income in the tax base (rents, interest, dividends, capital gains, business gross receipts and salary/wage income) and had one low tax rate to raise the same amount of revenue in recent years. 4%? 3%? 2%? California has the highest sales tax rates, highest personal income tax rates and the highest business tax rates. Given the long-term forecast for a prolonged '[Great Disruption](#)' what if we could transition taxation from income and sales to carbon and raise the same amount of tax much more easily and efficiently, while giving more of the income back to working people?

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A **new tax policy** for a **new green economy** - not based on the failed wealth-accumulation-taxation models but based on incentivizing technological innovation doing more with less ghg emissions toward a 100% renewable energy economy balanced with progressive taxation on carbon-emitting industry - is the right path to prevent ecological and mass human catastrophe to stop global temperature rise to 2 degrees C.

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The financial meltdown (we're now experiencing) would have been prevented since all of the current commercial real estate tax subsidies, if adopted by the state, would be eliminated from borrowing against, or speculating in, commercial real estate. Once the tax subsidies are eliminated there is no reason for hyper-inflated real estate values that aren't justified by the property's cash flow.

Can the [Commission on the 21st Century Economy](#) determine the amount of interest and depreciation write-offs given to landlords each year?

It would also be useful to know from the [Commission on the 21st Century Economy](#) or its staff the entire amount of taxes not paid over the past 20 years when commercial property was "exchanged" rather than sold. (When stock or bonds are exchanged" tax is always paid - but commercial property owners get a loophole allowing them to exchange for more valuable property without paying any tax - and tax is never paid when wealth is transferred from a decedent!)

And it would helpful for any true analysis of the tax system if the Commission or its staff could tell the public what percentage of property tax was paid by homeowners vs. commercial landlords in 1978 compared to 2008 for each county. I think the voting public and working people would be shocked to see how much the young and newer homeowners are paying in property tax verses commercial landlords who have often held the property for decades, if not generations. (Dave Wilbur, January 2009)

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To help weigh the need to ween the California economy off the growth model, the [Commission on the 21st Century Economy](#) can:

Determine the average amount of time and distance people spend getting to work these days versus 30 years ago.

Find out from their staff how many hours families spend working per week now verses 30 years ago.

Find out how much gasoline/oil usage do we use now per capita verses 30 years ago, and how much does that gasoline/gas cost us each year.

Find out how much money has the state government spent in the past 30 years to build its sprawling transportation system. (Implicit in needing state revenue - taxes - is the question of what we're spending the money on. If we can help government give up certain functions, such as building sprawl inducing growth, we can have lower taxes too!)

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The Elephant in the Room cannot be ignored in initiatives coming from the California Legislature - the inextricably entwined collapses of the world economy and collapses of ecological services forcing mass urban dislocations, plant and animal extinctions and, sooner than later - human extinction. How tax policy is structured will be the litmus test in successfully addressing the looming twin eco collapses.

Increases in wealth from classical growth economic activity that have concentrating in fewer hands factor can be channeled into spending on rebuilding ecological services.

To avert looming extinction, government must face the direct link between the steep upward curve of unregulated financial profiteering and the equally steep curve of the uncontrolled rate of its component rapacious consumptive-driven, greed-caused resulting greenhouse gas emissions. Otherwise, the growth economy-caused climate change head-long descent into planetary collapses of ecological services (deforestation, acidifying and deoxygenated oceans, drought, depleted food and water supplies) will cost more than the vastly weakened structure of society can muster. That point, fast approaching doing "business as usual," defines societal and human extinction.