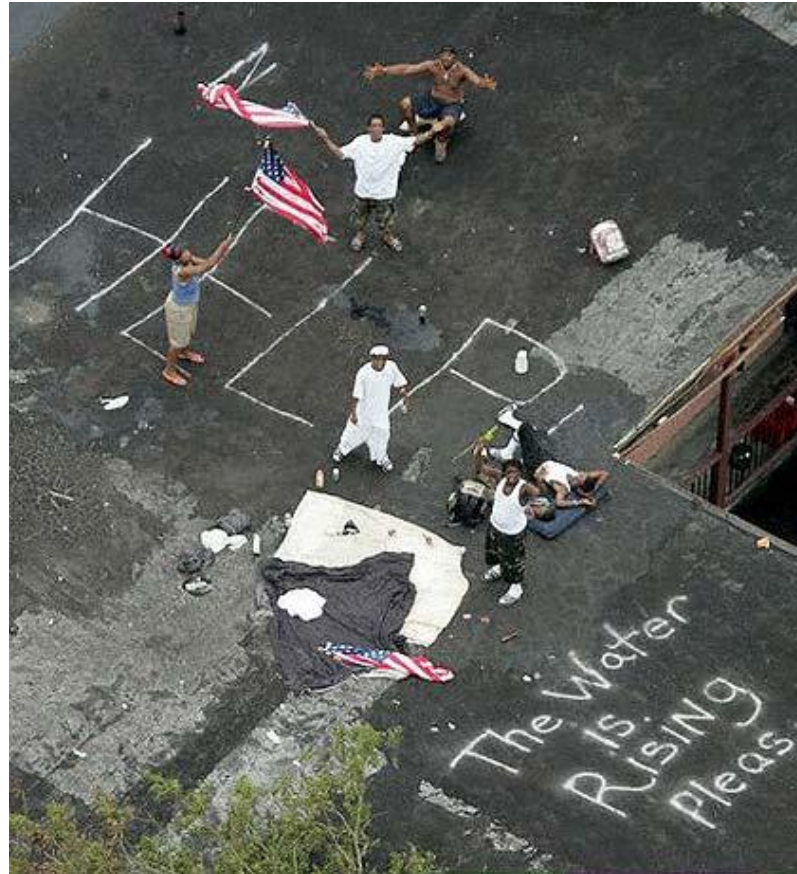


Global Warming and Economic Choices— Why Global Warming Is a Labor Issue



David Foster, Executive Director, Blue Green Alliance
Vancouver, British Columbia

Globalization and Global Warming

The economy that produces this...



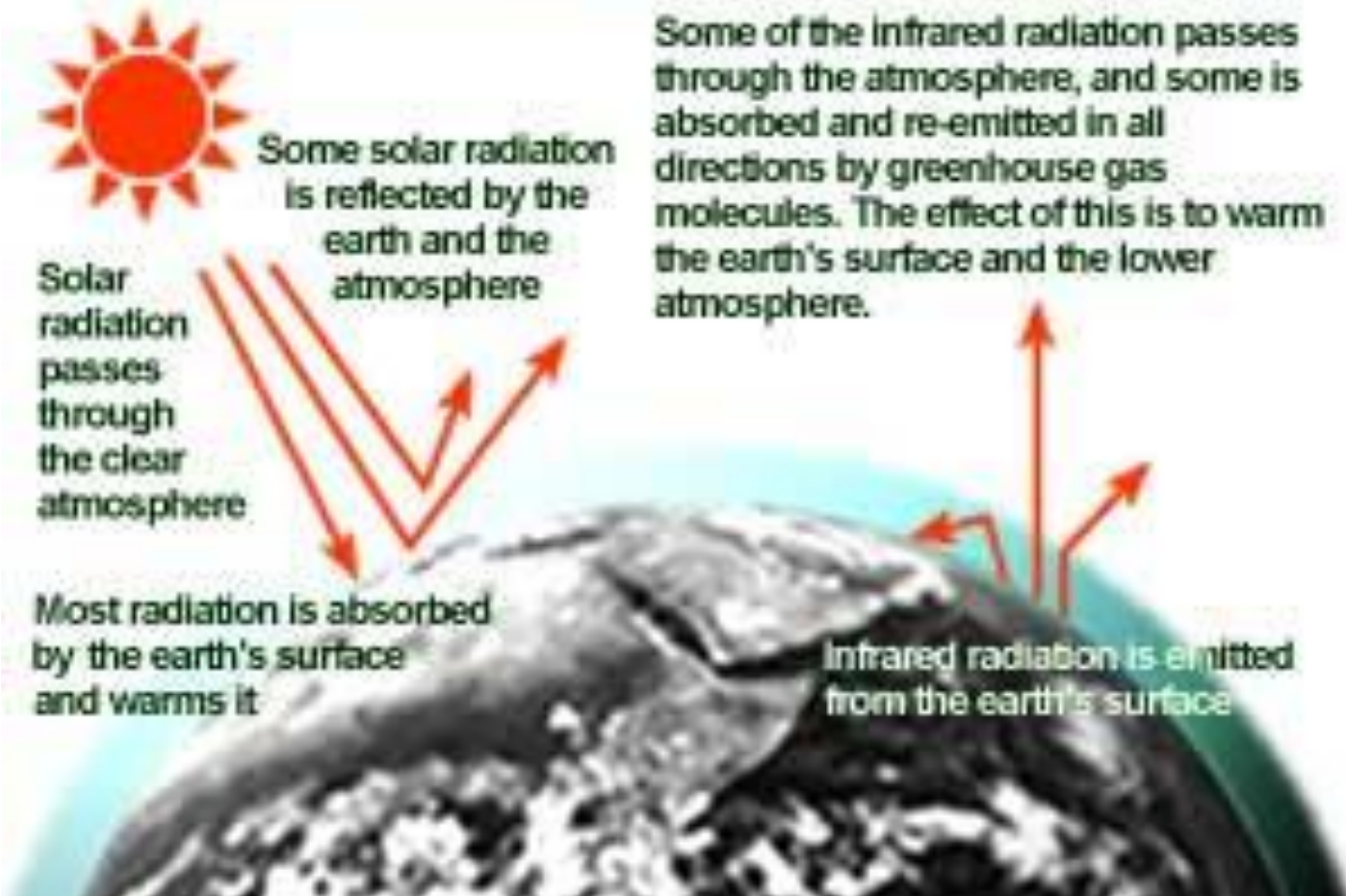
Globalization and Global Warming

...also produces that...



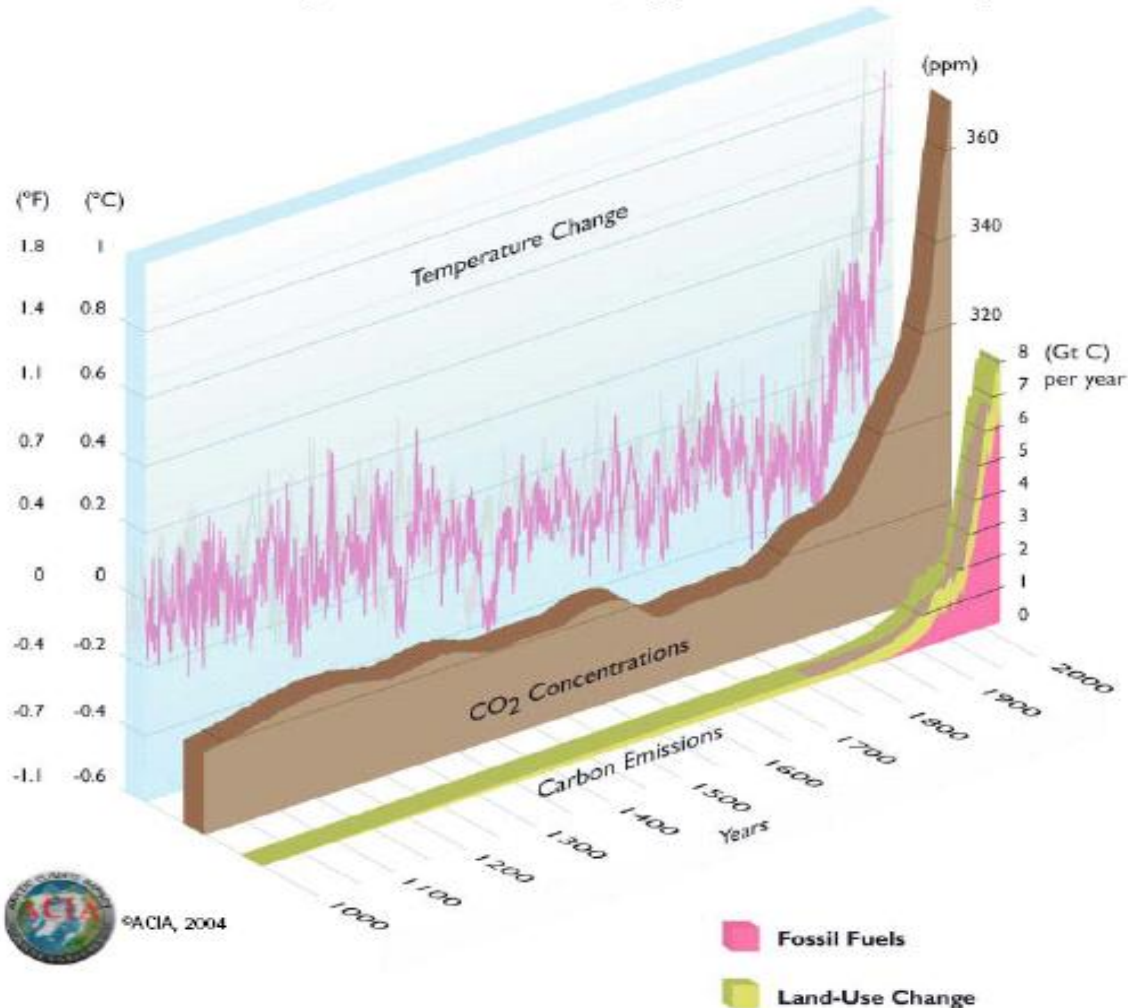
Over Time, A Greenhouse

The Greenhouse Effect



The main cause of the CO₂ build-up in the last 250 years has been emissions from fossil fuels & deforestation

1000 Years of Changes in Carbon Emissions, CO₂ Concentrations and Temperature



Fossil-fuel contribution is confirmed by reduced C-14 content.

Fossil fuels provide 80% of civilization's energy today.



©ACIA, 2004

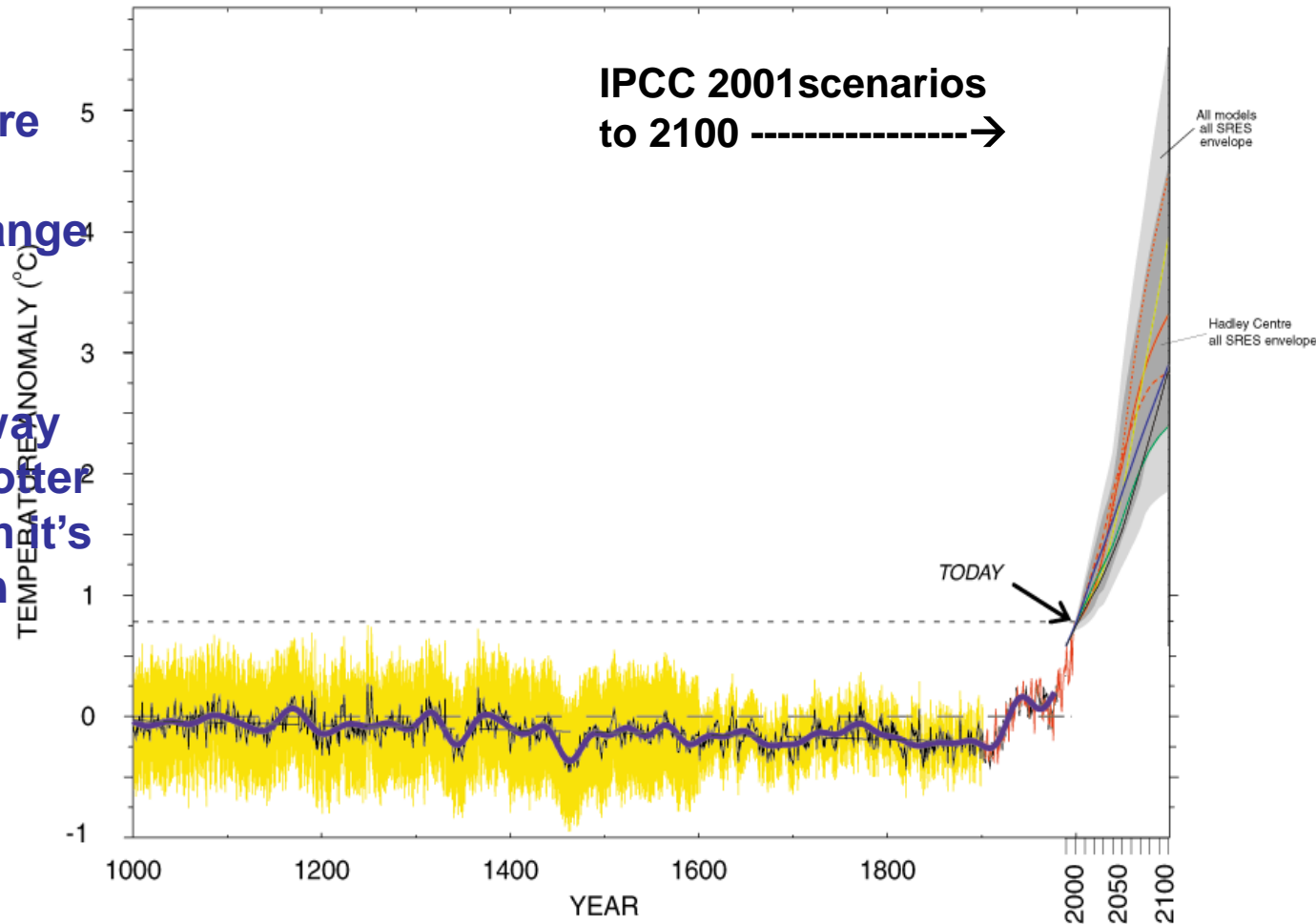
Where are we headed?

The next 100 years compared to the last 1000

Temperature, past and future

Projections of global average surface temperature show we're heading for a climatic state far outside the range of variation of the last 1000 years.

Indeed, we're on our way to making the world hotter in the 21st century than it's been in the last million years.



Why Does Climate Matter?

“Climate governs, so climate change alters,” —

John Holdren, Co-Chair U.S. National Commission on Energy

- Productivity of farms, forests, & fisheries
- Damages from storms, floods, droughts, wildfires
- Property losses from sea-level rise
- Prevalence of oppressive heat & humidity
- Geography of disease
- Expenditures on engineered environments
- Distribution & abundance of species



In North America

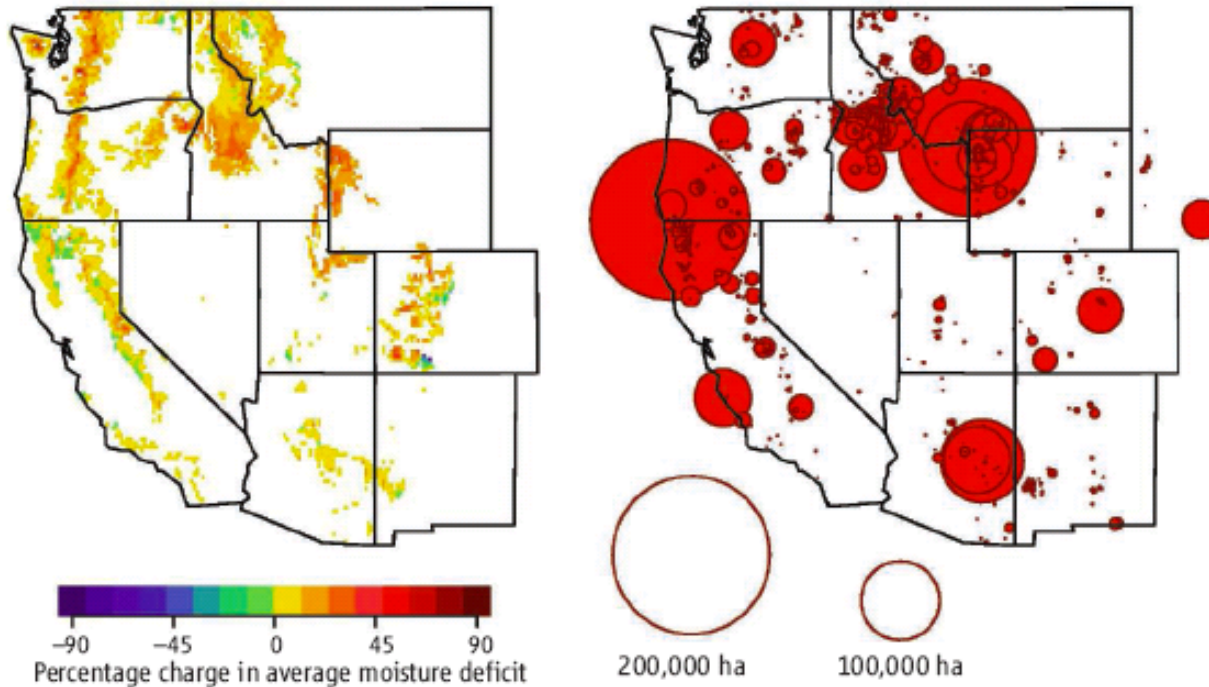
Climate Variability Means Drought



Moderate climate change in the early decades of the century is projected to increase aggregate yields of rain-fed agriculture by 5-20%, but with important variability among regions. Major challenges are projected for crops that are near the warm end of their suitable range or depend on highly utilised water resources. ** D [14.4]

In North America

Western Water Crisis Aggravated



Less moisture—more fires. Between 1970 and 2003, spring and summer moisture availability declined in many forests in the western United States (left). During the same time span, most wildfires exceeding 1000 ha in burned area occurred in these regions of reduced moisture availability (right). [Data from (4)]

Warming in western mountains is projected to cause decreased snow pack, more winter flooding, and reduced summer flows, exacerbating competition for over-allocated water resources. *** D [14.4, B14.2]

In North America

Forest Fires Will Increase



Disturbances from pests, diseases, and fire are projected to have increasing impacts on forests, with an extended period of high fire risk and large increases in area burned. *** N [14.4, B14.1]

In North America

Heat Waves Will Worsen

The Washington Post

130 Deaths Blamed on California Heat Wave

Temperatures Ease Slightly but Still Top 100 Degrees in Many Parts of the State

The New York Times

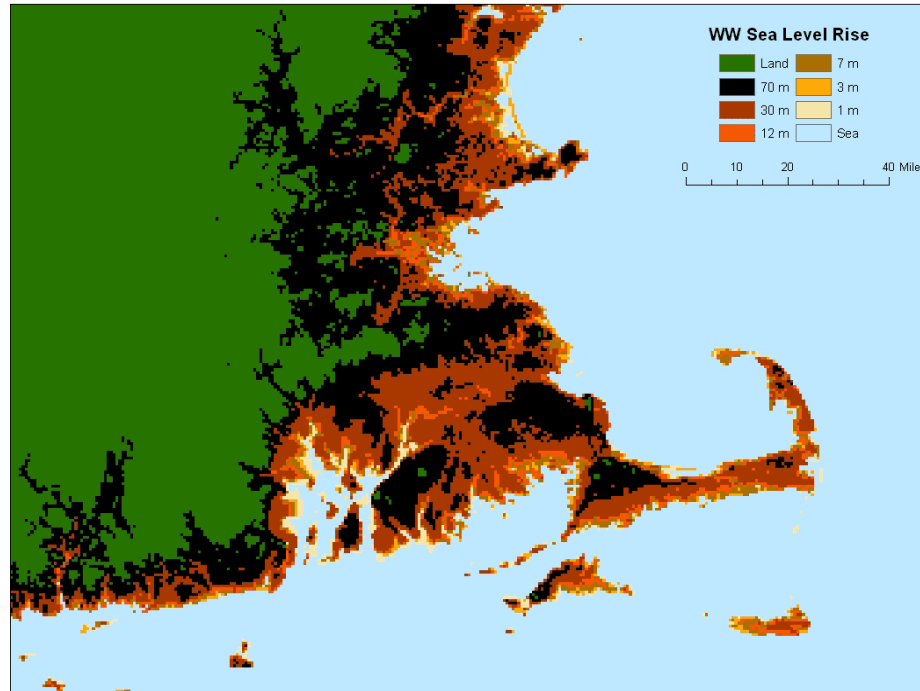
Heat Wave Was a Factor In 100 Deaths, New York Says

Last summer's brutal heat wave killed or contributed to the death of about 100 people in New York City, far more than previously reported, and it may have been the deadliest in decades, according to a new analysis by the city health department. The city has long counted the number...

Cities that currently experience heat waves are expected to be further challenged by an increased number, intensity and duration of heat waves during the course of the century, with potential for adverse health impacts. The growing number of the elderly population is most at risk. *** D [14.4]

In North America

The Threat to Coastal Areas



Coastal communities and habitats will be increasingly stressed by climate change impacts interacting with development and pollution. Population growth and the rising value of infrastructure in coastal areas increase vulnerability to climate variability and future climate change, with losses projected to increase if the intensity of tropical storms increases. Current adaptation is uneven and readiness for increased exposure is low. *** N [14.4]

The Social Cost of Climate Change

- In 2007 the International Panel on Climate Change (IPCC)—2000 scientists—issued 4 reports on the affects of climate change on human society and what to do about it.
- Among their findings—
 - 250 million people displaced from coastal plains
 - 250 million in Africa subject to water stress in 15 years
 - 1 billion people in Asia affected by loss of glacial melt river systems in 20 years

And the Economic Cost...

- If we go about business as usual, the Stern Report estimates:

“Using the results from formal economic models, the Review estimates that if we don’t act, the overall costs and risks of climate change will be equivalent to losing at least 5% of global GDP each year, now and forever. If a wider range of risks and impacts is taken into account, the estimates of damage could rise to 20% of GDP or more.”

“In contrast, the costs of action – reducing greenhouse gas emissions to avoid the worst impacts of climate change – can be limited to around 1% of global GDP each year.”

- \$2.4 T - \$9.6 T per year vs. \$480 B!

Climate Change Solutions:

Command and Control



A: \$15/ton



B: \$10/ton

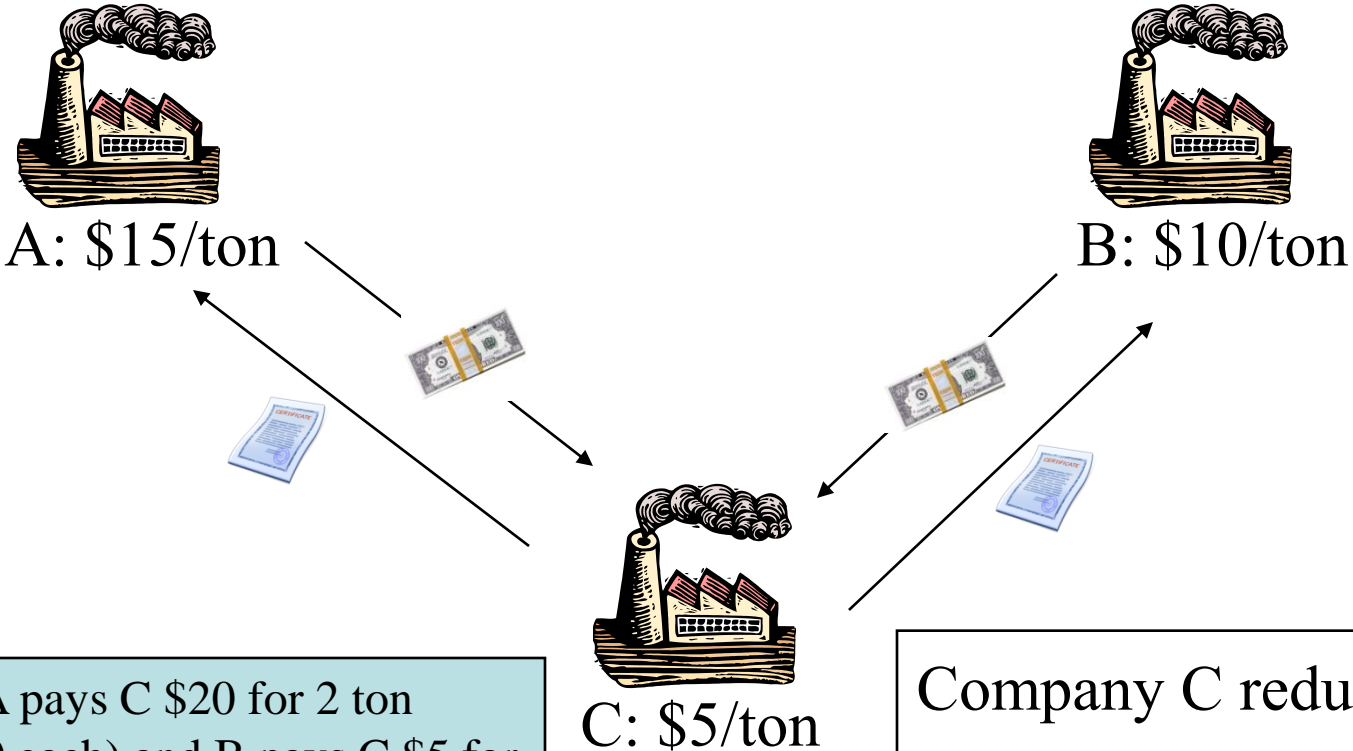


C: \$5/ton

Each cuts emissions by a ton
Total compliance cost = \$30

Climate Change Solutions:

Cap and Trade: Cut 3 tons

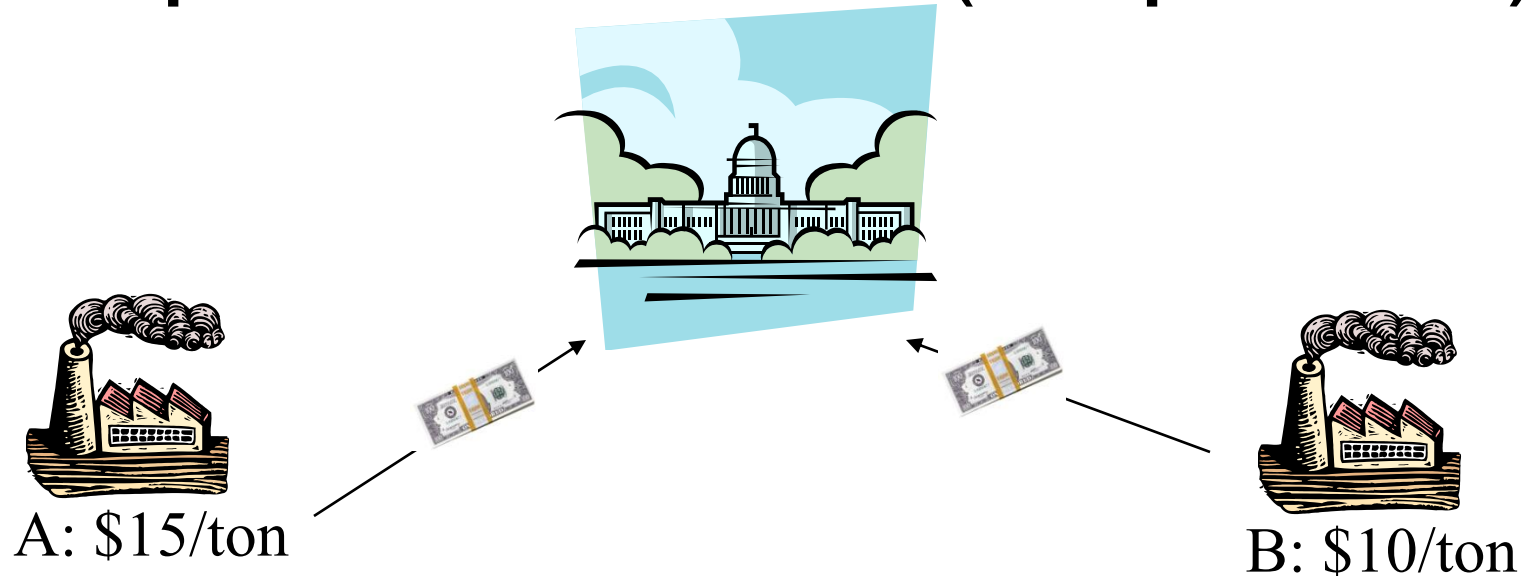


Company A pays C \$20 for 2 ton permit (\$10 each) and B pays C \$5 for 1 ton permit. C pays \$15 for upgrades to reduce 3 tons of emissions and makes \$10 in carbon profits.

Company C reduces all 3
Total compliance cost = \$15
Permit price \$5 - \$10

Climate Change Solutions:

Cap and Auction: (\$9 per ton)



Company C still pays \$15 for compliance upgrades; but A and B purchase 3 carbon permits for \$27 from the government. Revenues are used for social benefits and/or investments.



Company C reduces 3 tons
Total compliance cost = \$15
Same as Cap and Trade¹

So What Is Carbon Worth?

- IPCC estimates that if you calculate the Social Cost of Carbon, it would equal about \$12/ton* in a world economy that is producing 32.3 billion tons of carbon dioxide emissions per year or almost \$400 billion. Potentially as much as \$4.2 trillion.
- By comparison Gross World Domestic Product in 2006 was \$48 Trillion, US GDP was \$13 Trillion.
- Who pays and who profits?

*\$12 represents a mid-consensus view of IPCC economists.

Carbon Oligarchs?

How we handle the allocation of credits to produce or trade carbon, perhaps as much as 10% of current GDP, will have a profound effect on who wins and loses in the global economy.



But There's Another Problem!

- Free Trade!



- How we price carbon and enforce the rules will effect where and how goods are produced in the global economy.

The California Cement Problem

- California companies produce 10-11 million tons of cement.
- California consumes 18 million tons, the excess imported from Mexico, China and Brazil.
- If CA cement producers must buy carbon permits, but producers in Nevada, Mexico, China, etc. do not, then:
 - CA producers lose market to increased imports as costs go up,
 - Cement investments shift to polluting states and/or regions of the world,
 - Few overall reductions in global carbon emissions and, in fact, there is the likelihood of increased emissions, as efficient CA production shifts to high-emission locations.

The California Solution



District 12

Terry L. Bonds
District Director
Robert LaVenture
Assistant to the Director

August 10, 2007

To: California Air Resources Board

Mary Nichols, Chairperson
Headquarters Building
1001 "I" Street
P.O. Box 2815
Sacramento, CA 95812

Dear Members of the Board,

I write to register several concerns of the United Steelworkers, North America's largest manufacturing union, regarding the implementation of California's global warming legislation, AB-32.

Every product manufactured in the world today has its own carbon footprint—the carbon emissions associated with the production of that product. AB32 should require that producers of emission-intensive products imported for consumption in California purchase the same emissions allowances that California producers must when they sell their products in the same market...Any other principle would sorely disadvantage California industries and act as a powerful lever for driving additional jobs offshore.

Whose Clean Energy Economy?

- Ours...
 - Carbon permits sold or auctioned
 - Proceeds go to the government
 - Distributed to people to pay for higher energy costs, retrofitting homes, energy efficient appliances, mass transportation, etc.
 - Loans to industries that expand domestically,
 - Job retraining and relocation.
- Or Theirs?
 - Carbon permits are given to industry to trade and sell
 - Proceeds for use as companies see fit
 - Some companies enjoy a windfall, selling credits to inefficient ones
 - Globalization continues to incent companies to move offshore.

Whose Globalization?

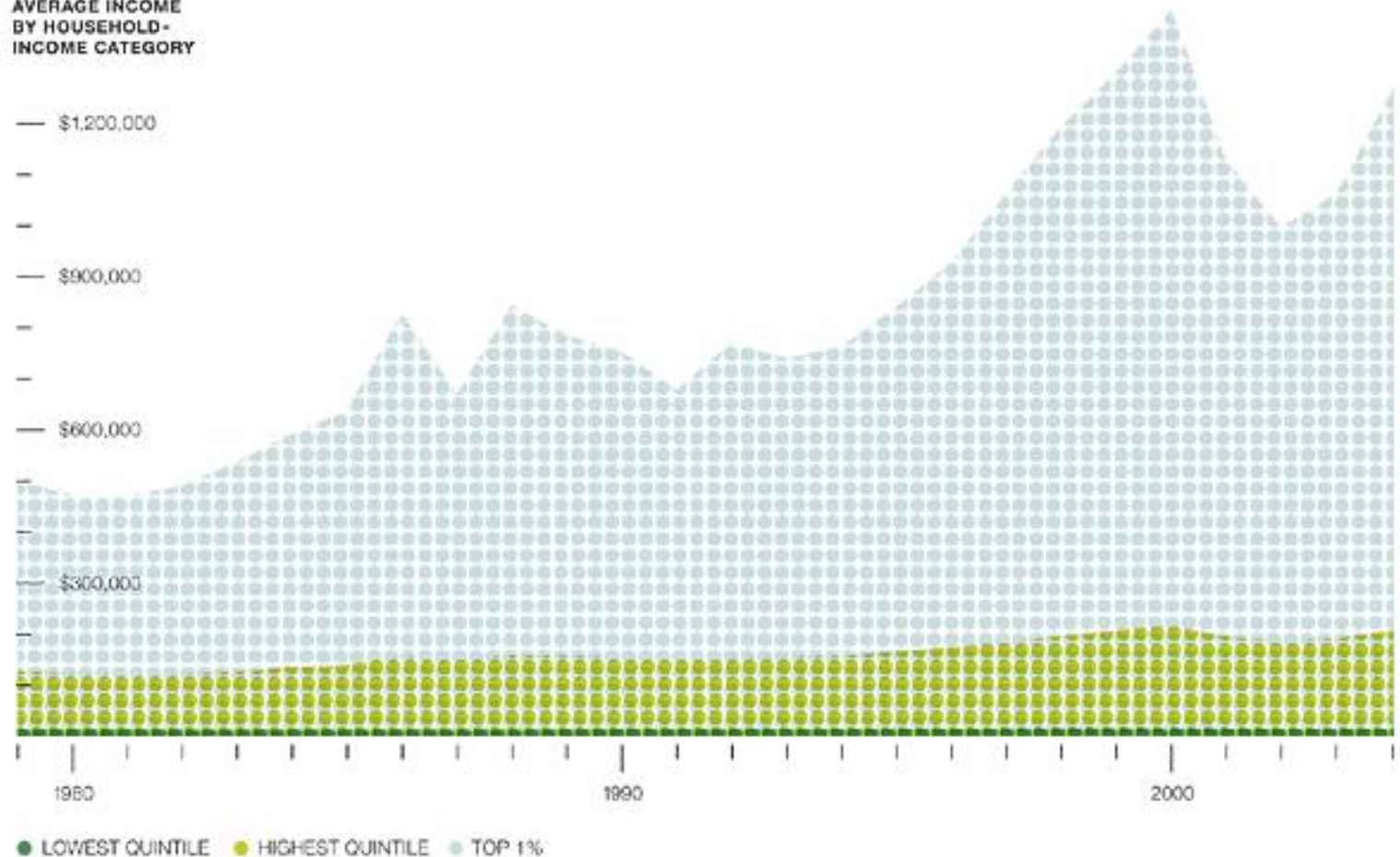
- Ours...
 - Border adjustment taxes measure the carbon in foreign products like steel, cement, or paper.
 - If their carbon content is higher than domestic products, a tariff is levied to reflect the real cost.
- Or Theirs?
 - Carbon permits trade to where production is cheapest.
 - In a global economy, countries with low labor and environmental standards continue to draw jobs and destabilize economies.

Whose Manufacturing Economy?

- Ours...
 - Invest in new clean energy technologies here at home
 - Create incentives for job growth
 - Revitalize manufacturing communities
- Or Theirs?
 - Use the global warming crisis to accelerate the movement of jobs to low wage countries.

Will Solutions to Global Warming Aggravate or Solve Inequality in the Global Economy?

AVERAGE INCOME
BY HOUSEHOLD-
INCOME CATEGORY



We Can Change the Global Economy!



An alliance between the labor and environmental movements with a strategic plan—to solve global warming through a clean energy economy that creates jobs and trade rules that protect those jobs with labor and environmental standards.

And We Can Change This—

THE COLUMBUS DISPATCH

Honda crushes Ohio's dreams

Wednesday, June 28, 2006

Paul Wilson

Ohio has lost the derby for Honda's new assembly plant and the 1,500 jobs that go with it. Honda will build the \$400 million plant in Greensburg, Ind., rejecting Ohio sites in Fayette and Van Wert counties and a site in Illinois, an industry source said yesterday...

To This—



THE CINCINNATI ENQUIRER

Greener Ohio Could Cash In

Tuesday, June 27, 2006

Groups: Environment, economy can co-exist

BY MIKE BOYER | ENQUIRER STAFF WRITER

Ohio's economy and its environment would benefit by taking an aggressive stance on dealing with global warming and the nation's dependence on fossil fuels, two groups said separately on Monday...

The Robber Barons



J.P. Morgan

In the last half of the 19th Century, land expropriation by the railroads, monopolies, trusts, and ruthless exploitation of labor created a new class of wealth in the U.S.

The Russian Oligarchs

Since the 1990's a handful of private citizens have seized control of tens of billions of state assets.

Roman Abramovich, \$18.2 B. EVRAZ



Vagit Alekperov, \$12.6 B. LUKOIL

Oleg Deripaska, \$5.8 B. RUSAL



Support the 2% Solution to Fight Global Warming and Save American Jobs.

Joint Presidential Primary education campaign w/ USW, SC and other partners, asking candidates to support:

- 2% reduction in carbon every year,
- 2 million new jobs,
- Fair trade legislation to save our jobs.



Let's Get Started!

Federal Renewable Portfolio Standard campaign, HR 969.

- 20% of all US electricity to be generated by renewable sources—wind, biomass, solar—by 2020
- 23 states already have RES or RPS legislation
- Would create 355,000 new jobs nationwide.

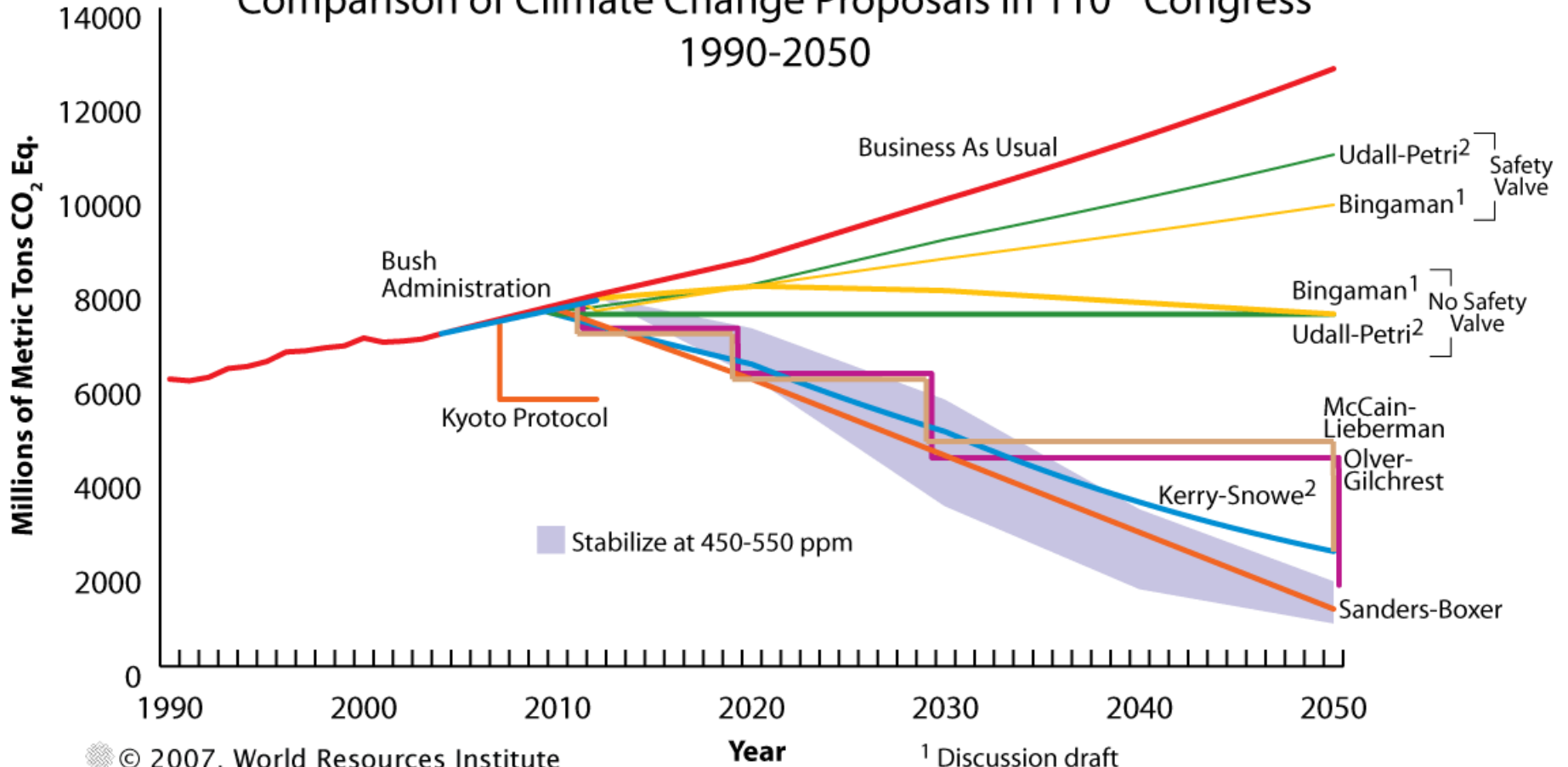


The Global Economy

“By definition a global economy is one where factors of production--natural resources, capital, technology, and labor--as well as goods and services move around the world. Capitalists make money by moving services, goods, and natural resources from where they are cheap to where they are expensive and from moving the production of goods from where it is expensive to where it is cheap.”

- *Lester Thurow, Economist, M.I.T.*

Comparison of Climate Change Proposals in 110th Congress 1990-2050



What If You Gave the Carbon Revenue Back to the People?

Distributional Incidence of Carbon Charges and Equal Per Capita Revenue Recycling

Income Decile	Mean Household Income (\$)	Costs from Higher Prices (\$)	Benefits from Recycling (\$)	Net Effect (\$)	Net Effect as % of Income
1	6,884	1,158	1,512	+354	+5.1%
2	13,127	1,418	1,777	+359	+2.7%
3	20,453	1,800	2,034	+234	+1.1%
4	28,107	2,085	2,358	+272	+1.0%
5	35,900	2,089	2,393	+304	+0.8%
6	44,406	2,303	2,429	+126	+0.3%
7	53,613	2,719	2,549	-170	-0.3%
8	66,179	2,800	2,902	+102	+0.2%
9	87,480	3,144	2,916	-228	-0.3%
10	161,801	4,119	2,740	-1,378	-0.9%

Source: Barnes and Breslow (2003: 144) based on "middle-range" scenario. Units are 1999 dollars.

Limit Coal and Use Other Fuels More Efficiently

TABLE 5
Carbon emissions by fuel

	1999	Baseline		Policy scenario	
		2010	2020	2010	2020
Coal	549	636	672	320	72
Petroleum	650	759	862	653	589
Natural gas	312	413	514	350	366
Total	1,511	1,814	2,054	1,324	1,018

What Will Happen to Jobs in the Clean Energy Economy?

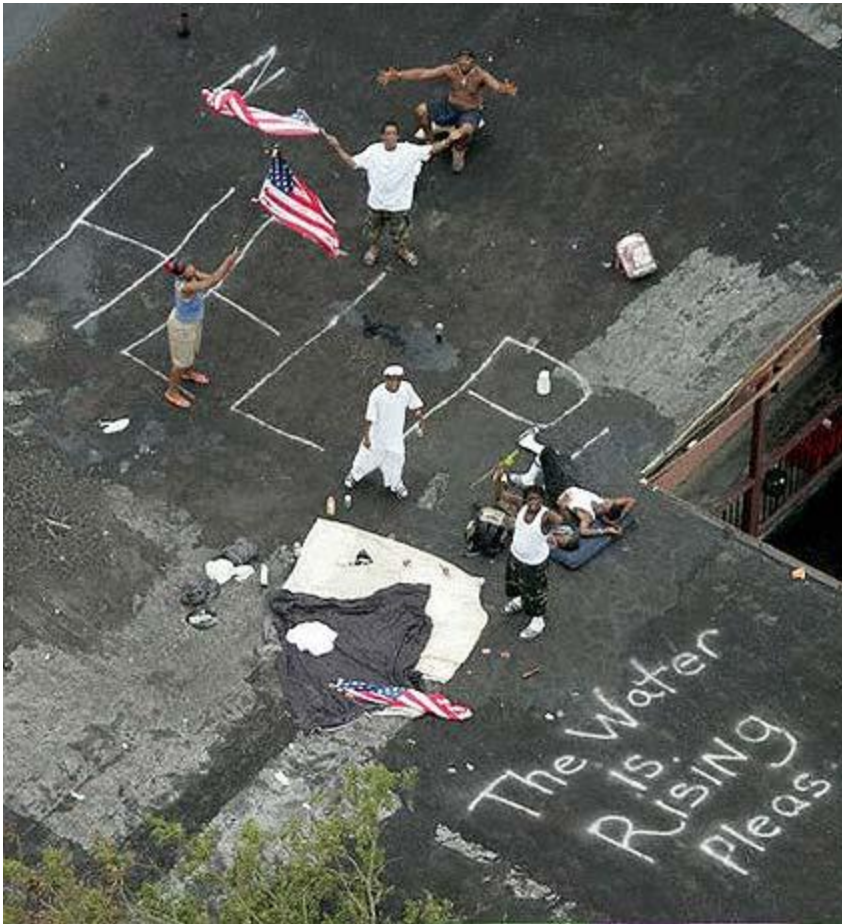
Table A.1
The Economic Impact of Investments in Strengthening Wind Power and other Renewable Energy Markets over a Ten-Year Period as Outlined in the Apollo Project: Detailed Sectoral Results

Sector	Total Expenditures (2003 Dollars)	Gross Product (2003 Dollars)	Personal Income (2003 Dollars)	Employment (Person-Years of Employment)
Agricultural Products & Services	\$4,082,070,009	\$1,081,185,666	\$736,347,607	15,019
Forestry & Fishery Products	\$185,767,659	\$170,574,415	\$63,263,270	1,015
Coal Mining	\$1,030,075,520	\$301,528,131	\$317,740,235	2,764
Crude Petroleum & Natural Gas	\$2,839,671,585	\$626,244,255	\$288,823,185	1,897
Miscellaneous Mining	\$250,792,201	\$100,877,324	\$59,300,254	834
New Construction	\$0	\$0	\$0	0
Maintenance & Repair Construction	\$5,152,837,551	\$2,765,808,636	\$2,279,198,619	41,018
Food Products & Tobacco	\$12,167,274,643	\$3,134,378,350	\$1,601,190,234	34,222
Textile Mill Products	\$1,102,430,486	\$237,322,523	\$200,799,097	5,748
Apparel	\$2,254,311,177	\$1,251,506,632	\$634,157,622	22,333
Paper & Allied Products	\$2,539,901,615	\$1,123,750,025	\$508,038,894	9,799
Printing & Publishing	\$4,082,926,337	\$2,003,396,725	\$1,307,662,381	28,264
Chemicals & Petroleum Refining	\$8,440,838,370	\$1,408,901,985	\$661,561,380	6,290
Rubber & Leather Products	\$1,956,710,663	\$832,630,952	\$486,752,064	12,286
Lumber Products & Furniture	\$801,891,968	\$281,211,676	\$200,488,444	5,284
Stone, Clay, & Glass Products	\$730,883,979	\$404,684,170	\$211,651,525	4,371
Primary Metal	\$9,798,244,500	\$2,935,013,029	\$2,184,680,102	41,422
Fabricated Metal Products	\$55,366,202,654	\$23,806,245,882	\$15,369,343,252	333,249
Machinery, Except Electrical	\$1,621,546,573	\$713,949,338	\$510,048,215	6,979
Electric & Electronic Equipment	\$1,420,038,315	\$781,784,550	\$467,377,515	5,094
Motor Vehicles & Equipment	\$3,496,061,790	\$742,796,313	\$482,568,451	8,747
Transp. Equip., Exc. Motor Vehicles	\$361,391,493	\$149,780,576	\$97,876,411	1,502
Instruments & Related Products	\$557,470,120	\$236,146,787	\$179,493,185	2,990
Miscellaneous Manufacturing	\$766,988,933	\$296,717,777	\$204,649,592	4,175
Transportation	\$8,615,369,475	\$5,652,467,910	\$3,738,340,440	65,290
Communication	\$5,896,263,195	\$3,642,940,350	\$1,555,288,200	17,850
Electric, Gas, Water, Sanitary Services	\$10,881,187,470	\$2,518,979,310	\$1,099,215,270	6,118
Wholesale Trade	\$9,494,125,335	\$6,427,416,150	\$3,706,105,230	53,932
Retail Trade	\$23,225,401,772	\$19,243,765,078	\$11,507,156,201	387,859
Finance	\$5,186,891,982	\$2,781,277,330	\$1,619,545,570	18,896
Insurance	\$5,033,131,526	\$3,006,123,216	\$1,797,178,836	27,780
Real Estate	\$25,936,771,815	\$3,849,093,405	\$620,172,450	7,056
Hotels, Lodging Places, Amusements	\$4,176,746,702	\$2,177,738,964	\$1,428,672,408	44,786
Personal Services	\$4,786,216,380	\$2,928,421,800	\$2,278,359,450	49,042
Business Services	\$57,833,658,106	\$33,598,221,406	\$27,407,539,473	427,246
Eating & Drinking Places	\$11,660,525,820	\$6,827,495,940	\$3,632,592,285	210,332
Health Services	\$9,013,284,826	\$6,302,004,711	\$5,328,403,360	112,780
Miscellaneous Services	\$9,056,778,679	\$3,745,472,702	\$3,247,012,628	98,626
Households	\$353,320,515	\$353,320,515	\$345,844,170	32,486
Total	\$312,145,801,740	\$148,441,174,507	\$98,364,437,505	2,155,378

SOURCE: Texas Multi-Regional Impact Assessment System, The Perryman Group

Apollo estimates over 2 million man-years of work would be created by a 20 % RPS over 10 years, including hundreds of thousands in manufacturing.

Who Will Pay? Who Should Pay?



- Failure to start the transition to new forms of energy today will devastate tomorrow's economy.
- Katrina and Rita cost more than \$200 Billion.
- How many can we afford?

Carbon Revenue—Who Gets It?

- If the U.S. were to implement the emissions goals of the Kyoto Protocol by 2010, it would generate \$240 B in 1999 dollars.
 - Dollars raised in this fashion could be recycled to the American people, or
 - Invested in a social “good” like national health insurance, or
 - Replace the social security tax (Gore’s idea), or
 - Invest in some other social good.

We Can Grow Jobs Generally, and Minimize Manufacturing Job Loss

TABLE C1
Employment by sector (thousands of jobs)

Sector label	2000	Baseline 2010	Policy 2010	Baseline 2020	Policy 2020
Agriculture, forestry, & fisheries	3,640	3,552	3,554	3,356	3,371
Coal mining	87	53	24	46	12
Other mining	168	183	180	175	171
Oil & gas wells	803	800	780	1,608	1,407
Construction	7,750	8,940	8,978	9,504	9,578
Food products	1,810	1,789	1,793	1,831	1,845
Tobacco products	39	24	24	15	15
Textiles & apparel	1,277	915	911	702	703
Paper	682	774	778	830	839
Printing & publishing	1,651	1,862	1,873	1,949	1,977
Drugs	262	293	294	337	340
Other chemicals	734	821	822	689	695
Petroleum refining	125	139	125	97	76
Rubber & plastic products	1,056	1,061	1,067	1,003	1,021
Stone, clay, & glass	601	592	589	576	554
Primary ferrous metals	426	425	425	354	356
Primary nonferrous metals	367	462	461	510	512
Machinery & equipment	2,948	2,405	2,410	2,068	2,145
Computers & office equipment	414	315	316	227	232
Motor vehicles & parts	1,095	991	997	921	925
Aerospace & marine	700	718	728	774	799
Other manufacturing	5,611	5,496	5,516	5,327	5,427
Railroads	229	177	164	140	125
Trucking, highway passenger transit	2,891	3,524	3,529	4,023	4,049
Other transport services	2,128	2,928	2,932	3,518	3,541
Communications	1,599	1,306	1,319	1,079	1,097
Electric utilities	308	401	305	314	169
Gas utilities	115	147	138	187	142
Water & sanitary services	289	372	373	483	485
Retail & wholesale trade	25,308	26,243	26,339	26,075	26,277
Restaurants, hotels, & amusements	12,695	14,753	14,840	16,252	16,470
Finance, insurance, & real estate	8,032	9,913	9,998	10,934	11,081
Professional services	5,210	4,204	4,220	3,422	3,461
Computer & data processing	1,891	2,619	2,652	3,081	3,220
Advertising & business services	7,701	9,828	9,850	10,829	10,929
Medical & nursing	11,114	12,347	12,409	14,024	14,174
Education, social services, membership org.	8,049	9,004	9,111	9,675	9,866
Other services	3,975	4,737	4,819	5,630	5,770
Federal, state, & local government	17,563	19,151	19,272	21,555	21,693
Total	141,343	154,263	154,917	164,119	165,548

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