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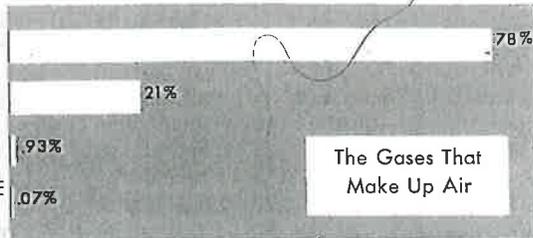
AIR— What It Is and What It Does

NITROGEN

OXYGEN

ARGON

CARBON DIOXIDE
 AND OTHERS



The Gases That
 Make Up Air

In addition to nitrogen, oxygen, argon, and carbon dioxide, the composition of air includes traces of hydrogen, neon, krypton, helium, ozone, and xenon.

AIR. In countless tasks, from running blast furnaces to blowing up tires, people use air. Airplanes and kites need it to fly. The sound of thunder or a clap of hands requires air to be heard. Birds, fish, dogs, and man would die without it. Trees, flowers, and grass also need air to live.

Human beings are in contact with air every second that they live. It is all around, and it extends upward for many miles as the earth's atmosphere (see Atmosphere). Sometimes, on a windy day, people feel it brushing against their skin. They can hear it move when the wind howls or a tire blows out. Most of the time, however, people are completely unaware of the air, because it has no color, taste, or odor. They even think of a container of air as being empty.

What Is Air?

This invisible substance called air is really a mixture of several gases. Each gas is present in the form of separate, tiny particles called *molecules*. The molecules are much too small to be seen even with

HEATED AIR EXPANDS



How Carbon Dioxide Supports Life

Air holds a mere trace of carbon dioxide—about 0.05 per cent. Slight as it is, plants and animals depend upon this trace for life.

Green plants combine the carbon dioxide with water to make sugar by the process called photosynthesis (see Plants). From the sugar, the plants then make starch and cellulose. Animals eat the plants, and in getting energy from the food, they return carbon dioxide to the air (see Respiration). From the air the gas enters again into more photosynthesis in an endless cycle of carbon use.



Heat causes air in the bottle to expand. As the air requires more room, it flows into the balloon and inflates it.

the most powerful microscope. They make up for their small size, however, by being present in tremendous numbers. Scientists estimate that one cubic inch of ordinary air contains about 300 billion billion of them. They are so tiny, however, that there is plenty of space between them.

Under ordinary conditions, each molecule has energy enough to shoot through space at a speed of about 1,000 miles an hour. Very few molecules, however, travel far in a straight line at this speed. One reason is that the earth's force of gravity holds most of them within a few miles of the ground in spite of their speed. In this space they fly about, colliding with each other at a tremendous rate. In usual situations near the ground, each molecule collides with other molecules about 5 billion times a second.

Different Elements That Make Up Air

The molecules of two different elements, nitrogen and oxygen, make up about 99 per cent of the air. The rest includes small amounts of argon and carbon dioxide. (Other gases such as hydrogen, neon, krypton, helium, ozone, and xenon are present in traces.)

Oxygen is the life-giving element in the air. It helps plants make food and helps animals use these substances as though they were fuel. The heat given off by this process supplies energy, just as the burning of gasoline keeps an engine running. Oxygen supports fire and other chemical changes in matter. It also causes metals to rust. (See also Oxygen.)

Certain compounds of nitrogen help build tissue in living things. Nitrogen also serves to dilute the oxygen in the air. Plants, men, and animals are used to the diluted mixture and would soon "burn out" if they lived in pure oxygen. Indeed, the living world would soon burn up, for in pure oxygen every spark or flash of lightning would start raging fires which could never be controlled. (See also Nitrogen.)

Carbon dioxide is formed by the union of oxygen and carbon. Every fire produces it, as do the bodies of men and animals. They give it off in every breath they expel. Plants use the carbon in it for making food and give back the oxygen to the air. Thus they continually renew the supply of oxygen. (See also Carbon; Plants.)

Most air contains water vapor. The amount varies greatly from time to time and place to place. Air also contains dust, pollen, spores, bacteria, and other bits of solid and liquid matter.

CARBON DIOXIDE GAS IS MORE THAN 50% HEAVIER THAN AIR

WEIGHTS AND SPECIFIC GRAVITIES

Substance	Weight Lb. per Cu. Ft.	Specific Gravity	Substance	Weight Lb. per Cu. Ft.	Specific Gravity
METALS, ALLOYS, ORES			TIMBER, U. S. SEASONED		
Aluminum, cast, hammered.....	165	2.55-2.75	Moisture Content by Weight:		
Brass, cast, rolled.....	534	8.4-8.7	Seasoned timber 15 to 20%		
Bronze, 7.9 to 14% Sn.....	509	7.4-8.9	Green timber up to 50%		
Bronze, aluminum.....	481	7.7	Ash, white, red.....	40	0.62-0.65
Copper, cast, rolled.....	556	8.8-9.0	Cedar, white, red.....	22	0.32-0.38
Copper ore, pyrites.....	262	4.1-4.3	Chestnut.....	41	0.66
Gold, cast, hammered.....	1205	19.25-19.3	Cypress.....	30	0.48
Iron, cast, pig.....	450	7.2	Fir, Douglas spruce.....	32	0.51
Iron, wrought.....	485	7.6-7.9	Fir, eastern.....	25	0.40
Iron, spiegel-eisen.....	468	7.5	Elm, white.....	45	0.72
Iron, ferro-silicon.....	437	6.7-7.3	Hemlock.....	29	0.42-0.52
Iron ore, hematite.....	325	5.2	Hickory.....	49	0.74-0.84
Iron ore, hematite in bank.....	160-180	-----	Locust.....	46	0.73
Iron ore, hematite loose.....	130-160	-----	Maple, hard.....	43	0.68
Iron ore, limonite.....	237	3.6-4.0	Maple, white.....	33	0.53
Iron ore, magnetite.....	315	4.9-5.2	Oak, chestnut.....	54	0.86
Iron slag.....	172	2.5-3.0	Oak, live.....	59	0.95
Lead.....	710	11.37	Oak, red, black.....	41	0.65
Lead ore, galena.....	465	7.3-7.6	Oak, white.....	46	0.74
Magnesium, alloys.....	112	1.74-1.83	Pine, Oregon.....	32	0.51
Manganese.....	475	7.2-8.0	Pine, red.....	30	0.48
Manganese ore, pyrolusite.....	259	3.7-4.6	Pine, white.....	26	0.41
Mercury.....	849	13.6	Pine, yellow, long-leaf.....	44	0.70
Monel Metal.....	556	8.8-9.0	Pine, yellow, short-leaf.....	38	0.61
Nickel.....	565	8.9-9.2	Poplar.....	30	0.48
Platinum, cast, hammered.....	1330	21.1-21.5	Redwood, California.....	26	0.42
Silver, cast, hammered.....	656	10.4-10.6	Spruce, white, black.....	27	0.40-0.46
Steel, rolled.....	490	7.85	Walnut, black.....	38	0.61
Tin, cast, hammered.....	459	7.2-7.5	Walnut, white.....	26	0.41
Tin ore, cassiterite.....	418	6.4-7.0			
Zinc, cast, rolled.....	440	6.9-7.2			
Zinc ore, blende.....	253	3.9-4.2			
VARIOUS SOLIDS			VARIOUS LIQUIDS		
Cereals, oats..... bulk	32	-----	Alcohol, 100%.....	49	0.79
Cereals, barley..... bulk	39	-----	Acids, muriatic 40%.....	75	1.20
Cereals, corn, rye..... bulk	48	-----	Acids, nitric 91%.....	94	1.50
Cereals, wheat..... bulk	48	-----	Acids, sulphuric 87%.....	112	1.80
Hay and Straw..... bales	20	-----	Lye, soda 66%.....	106	1.70
Cotton, Flax, Hemp.....	93	1.47-1.50	Oils, vegetable.....	58	0.91-0.94
Fats.....	58	0.90-0.97	Oils, mineral, lubricants.....	57	0.90-0.93
Flour, loose.....	28	0.40-0.50	Water, 4°C. max. density.....	62.428	1.0
Flour, pressed.....	47	0.70-0.80	Water, 100°C.....	59.830	0.9584
Glass, common.....	156	2.40-2.60	Water, ice.....	56	0.88-0.92
Glass, plate or crown.....	161	2.45-2.72	Water, snow, fresh fallen.....	8	.125
Glass, crystal.....	184	2.90-3.00	Water, sea water.....	64	1.02-1.03
Leather.....	59	0.86-1.02			
Paper.....	58	0.70-1.15			
Potatoes, piled.....	42	-----			
Rubber, caoutchouc.....	59	0.92-0.96			
Rubber goods.....	94	1.0-2.0			
Salt, granulated, piled.....	48	-----			
Salt peter.....	67	-----			
Starch.....	96	1.53			
Sulphur.....	125	1.93-2.07			
Wool.....	82	1.32			
			GASES		
			Air, 0°C. 760 mm.....	.08071	1.0
			Ammonia.....	.0478	0.5920
			Carbon dioxide.....	.1234	1.5291
			Carbon monoxide.....	.0781	0.9673
			Gas, illuminating.....	.028-.036	0.35-0.45
			Gas, natural.....	.038-.039	0.47-0.48
			Hydrogen.....	.00559	0.0693
			Nitrogen.....	.0784	0.9714
			Oxygen.....	.0892	1.1056

The specific gravities of solids and liquids refer to water at 4°C., those of gases to air at 0°C. and 760 mm. pressure. The weights per cubic foot are derived from average specific gravities, except where stated that weights are for bulk, heaped or loose material, etc.

ASHLAF
Granit
Limes
Sands

MORTA
MA
Granit
Limes
Sands

DRY RL
Granit
Limes
Sands

BRICK
Presse
Comm
Soft b

CONCRI
Cemel
Cemel
Cemel

VARIOL
MA
Ashes,
Cemel
Cemel
Lime,
Morta
Slags,
Slags,
Slags,
Slags,

EARTH,
Clay,
Clay,
Clay a
Earth,
Earth,
Earth,
Earth,
Earth,
Earth,
Riprat
Riprat
Sand,
Sand,
Sand,

EXCAV/
Sand
Sand
Clay...
River
Soil...
Stone

15291

<http://www.californiacitynews.org/2012/07/new-report-says-ab-32-leading-st-down-costly-path-billions-lost-revenue-local-govt.html>

New Report Says AB 32 Leading the St Down a Costly Path; Billions in Lost Revenue for Local Govt

Business leaders and local government officials gathered in Sacramento June 28 to discuss the California Manufacturers and Technology Association's long anticipated AB 32 (California Global Warming Solutions Act) cost impact report and investment survey results. In the absence of a full, detailed jobs and cost impact report on the repercussions of AB 32, the CMTA has, with report author Andrew Chang, been working on a model to assess the jobs, fiscal, investment, and industrial impacts on the state. The report on the effects of AB 32 found the following:

- Cumulative costs: \$135.8 billion
- Annual AB 32 direct costs in 2020: \$35.3 billion
- Gross state product (GSP): reduced by \$153.2 billion (a loss of 5.6%)
- California job loss: 262,000
- Household energy prices: increase by \$2,500 per year for the average family
- State and local tax revenue: reduced by over \$7.4 billion
 - \$6.8 billion from state revenue, \$640 million from local revenue

Additionally, the investment survey found that manufacturing companies are no longer interested in calling California home. The report concluded that costs, regulations, permitting delays, a lack of incentives, high labor costs, and a high tax rate, among other things, make business difficult in the Golden State.

Of greatest concern to cities in California is the unknown impact of implementing SB 375. In a press conference, Diamond Bar Mayor Ling Ling Chang spoke of the impact AB 32 has on cities and families. Local governments stand to lose millions in revenue; at a time when municipalities are already facing increased costs, cities can't lose what revenue they have coming in. While she agreed with the environmental aims of AB 32, she urges leaders to find more cost-effective ways to reach solutions.

See the full reports [here](#).

For more information on AB 32, visit the [California Air Resources Board](#).

Andrew Chang further explained the costs of AB 32 before the report's release over at Fox & Hounds. See [here](#).

by CFACT

FOR IMMEDIATE RELEASE

Contact: Blanquita Cullum 703-307-9510 bqview at mac.com

Joint letter to NASA Administrator blasts agency's policy of ignoring empirical evidence

HOUSTON, TX – April 10, 2012.

49 former NASA scientists and astronauts sent a letter to NASA Administrator Charles Bolden last week admonishing the agency for its role in advocating a high degree of certainty that man-made CO₂ is a major cause of climate change while neglecting empirical evidence that calls the theory into question.

The group, which includes seven Apollo astronauts and two former directors of NASA's Johnson Space Center in Houston, are dismayed over the failure of NASA, and specifically the Goddard Institute For Space Studies (GISS), to make an objective assessment of all available scientific data on climate change. They charge that NASA is relying too heavily on complex climate models that have proven scientifically inadequate in predicting climate only one or two decades in advance.

H. Leighton Steward, chairman of the non-profit Plants Need CO₂, noted that many of the former NASA scientists harbored doubts about the significance of the CO₂-climate change theory and have concerns over NASA's advocacy on the issue. While making presentations in late 2011 to many of the signatories of the letter, Steward realized that the NASA scientists should make their concerns known to NASA and the GISS.

"These American heroes – the astronauts that took to space and the scientists and engineers that put them there – are simply stating their concern over NASA's extreme advocacy for an unproven theory," said Leighton Steward. "There's a concern that if it turns out that CO₂ is not a major cause of climate change, NASA will have put the reputation of NASA, NASA's current and former employees, and even the very reputation of science itself at risk of public ridicule and distrust."

Select excerpts from the letter:

- "The unbridled advocacy of CO₂ being the major cause of climate change is unbecoming of NASA's history of making an objective assessment of all available scientific data prior to making decisions or public statements."
- "We believe the claims by NASA and GISS, that man-made carbon dioxide is having a catastrophic impact on global climate change are not substantiated."
- "We request that NASA refrain from including unproven and unsupported remarks in its future releases and websites on this subject."

The full text of the letter:

March 28, 2012

The Honorable Charles Bolden, Jr.
NASA Administrator
NASA Headquarters
Washington, D.C. 20546-0001

Dear Charlie,

We, the undersigned, respectfully request that NASA and the Goddard Institute for Space Studies (GISS) refrain from including unproven remarks in public releases and websites. We believe the claims by NASA and GISS, that man-made carbon dioxide is having a catastrophic impact on global climate change are not substantiated, especially when considering thousands of years of empirical data. With hundreds of well-known climate scientists and tens of thousands of other scientists publicly declaring their disbelief in the catastrophic forecasts, coming particularly from the GISS leadership, it is clear that the science is NOT settled.

The unbridled advocacy of CO₂ being the major cause of climate change is unbecoming of NASA's history of making an objective assessment of all available scientific data prior to making decisions or public statements.

As former NASA employees, we feel that NASA's advocacy of an extreme position, prior to a thorough study of the possible overwhelming impact of natural climate drivers is inappropriate. We request that NASA refrain from including unproven and unsupported remarks in its future releases and websites on this subject. At risk is damage to the exemplary reputation of NASA, NASA's current or former scientists and employees, and even the reputation of science itself.

For additional information regarding the science behind our concern, we recommend that you contact Harrison Schmitt or Walter Cunningham, or others they can recommend to you.

Thank you for considering this request.

Sincerely,

(Attached signatures)

CC: Mr. John Grunsfeld, Associate Administrator for Science

CC: Ass Mr. Chris Scolese, Director, Goddard Space Flight Center

Ref: *Letter to NASA Administrator Charles Bolden, dated 3-26-12, regarding a request for NASA to refrain from making unsubstantiated claims that human produced CO₂ is having a catastrophic impact on climate change.*

/s/ Jack Barneburg, Jack – JSC, Space Shuttle Structures, Engineering Directorate, 34 years

/s/ Larry Bell – JSC, Mgr. Crew Systems Div., Engineering Directorate, 32 years

/s/ Dr. Donald Bogard – JSC, Principal Investigator, Science Directorate, 41 years

/s/ Jerry C. Bostick – JSC, Principal Investigator, Science Directorate, 23 years

/s/ Dr. Phillip K. Chapman – JSC, Scientist – astronaut, 5 years

/s/ Michael F. Collins, JSC, Chief, Flight Design and Dynamics Division, MOD, 41 years

/s/ Dr. Kenneth Cox – JSC, Chief Flight Dynamics Div., Engr. Directorate, 40 years

/s/ Walter Cunningham – JSC, Astronaut, Apollo 7, 8 years

/s/ Dr. Donald M. Curry – JSC, Mgr. Shuttle Leading Edge, Thermal Protection Sys., Engr. Dir., 44 years

/s/ Leroy Day – Hdq. Deputy Director, Space Shuttle Program, 19 years

/s/ Dr. Henry P. Decell, Jr. – JSC, Chief, Theory & Analysis Office, 5 years

/s/ Charles F. Deiterich – JSC, Mgr., Flight Operations Integration, MOD, 30 years

/s/ Dr. Harold Doiron – JSC, Chairman, Shuttle Pogo Prevention Panel, 16 years

/s/ Charles Duke – JSC, Astronaut, Apollo 16, 10 years

/s/ Anita Gale

/s/ Grace Germany – JSC, Program Analyst, 35 years

/s/ Ed Gibson – JSC, Astronaut Skylab 4, 14 years

/s/ Richard Gordon – JSC, Astronaut, Gemini Xi, Apollo 12, 9 years

/s/ Gerald C. Griffin – JSC, Apollo Flight Director, and Director of Johnson Space Center, 22 years

/s/ Thomas M. Grubbs – JSC, Chief, Aircraft Maintenance and Engineering Branch, 31 years

/s/ Thomas J. Harmon

/s/ David W. Heath – JSC, Reentry Specialist, MOD, 30 years

/s/ Miguel A. Hernandez, Jr. – JSC, Flight crew training and operations, 3 years

/s/ James R. Roundtree – JSC Branch Chief, 26 years

/s/ Enoch Jones – JSC, Mgr. SE&I, Shuttle Program Office, 26 years

/s/ Dr. Joseph Kerwin – JSC, Astronaut, Skylab 2, Director of Space and Life Sciences, 22 years

/s/ Jack Knight – JSC, Chief, Advanced Operations and Development Division, MOD, 40 years

/s/ Dr. Christopher C. Kraft – JSC, Apollo Flight Director and Director of Johnson Space Center, 24 years

/s/ Paul C. Kramer – JSC, Ass't for Planning Aerospace and Flight Mechanics Div., Engr. Dir., 34 years

/s/ Alex (Skip) Larsen

/s/ Dr. Lubert Leger – JSC, Ass't. Chief Materials Division, Engr. Directorate, 30 years

/s/ Dr. Humbolt C. Mandell – JSC, Mgr. Shuttle Program Control and Advance Programs, 40 years

/s/ Donald K. McCutchen – JSC, Project Engineer – Space Shuttle and ISS Program Offices, 33 years

/s/ Thomas L. (Tom) Moser – Hdq. Dep. Assoc. Admin. & Director, Space Station Program, 28 years

/s/ Dr. George Mueller – Hdq., Assoc. Adm., Office of Space Flight, 6 years

/s/ Tom Ohesorge

/s/ James Peacock – JSC, Apollo and Shuttle Program Office, 21 years

/s/ Richard McFarland – JSC, Mgr. Motion Simulators, 28 years

/s/ Joseph E. Rogers – JSC, Chief, Structures and Dynamics Branch, Engr. Directorate, 40 years

/s/ Bernard J. Rosenbaum – JSC, Chief Engineer, Propulsion and Power Division, Engr. Dir., 48 years

/s/ Dr. Harrison (Jack) Schmitt – JSC, Astronaut Apollo 17, 10 years

/s/ Gerard C. Shows – JSC, Asst. Manager, Quality Assurance, 30 years

/s/ Kenneth Suit – JSC, Ass't Mgr., Systems Integration, Space Shuttle, 37 years

/s/ Robert F. Thompson – JSC, Program Manager, Space Shuttle, 44 years/s/ Frank Van Rensselaer – Hdq., Mgr. Shuttle Solid Rocket Boosters, 15 years

/s/ Dr. James Visentine – JSC Materials Branch, Engineering Directorate, 30 years

/s/ Manfred (Dutch) von Ehrenfried – JSC, Flight Controller; Mercury, Gemini & Apollo, MOD, 10 years

/s/ George Weisskopf – JSC, Avionics Systems Division, Engineering Dir., 40 years

/s/ Al Worden – JSC, Astronaut, Apollo 15, 9 years

/s/ Thomas (Tom) Wismuller – JSC, Meteorologist, 5 years

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Nancy Pelosi Pushes Agenda 21 On House Floor

February 29, 2012 – 3:06 pm EST

[NoisyRoom](#)

By: AJ

Hat Tip: Darin Moser and Heather Gass



What you are about to see in this video is Nancy Pelosi (D-CA) spearheading HC Res 353 on the House floor to pursue United Nations (UN) Agenda 21. She calls out “Agenda 21” twice and clearly states that it is the “United Nations Sustainable Development” program.

Advance to 11:43:30 on the video and watch until 11:51:48. Representative Eliot Engel (D-NY) speaks first, Nancy Pelosi speaks next and WM Broomfield (R-MI) speaks last. They all use the term “Agenda 21” and they all state it is from the “United Nations.”

[C-SPAN Video Library – House Session October 02, 1992](#)

The bill is described on the House floor as follows:

H.C.Res. 353: A bill to expressing the sense of the Congress that the United States should assume a strong leadership role in implementing the decisions made at the Earth Summit by developing a national strategy to implement **Agenda Twenty-One** and other Earth Summit agreements through domestic policy and foreign policy, by cooperating with all countries to identify and initiate further agreements to protect the global environment, and by supporting and participating in a high-level [United Nations](#) Sustainable Development Commission. [Emphasis added]

There is simply no other way to state this... Progressives lie. Their continuous denial that UN Agenda 21 exists defies their own words; it exists, they know it and they were the ones pushing it – by name.

We know there are Progressives on both sides of the aisle, so it is not surprising that they have a Republican stooge (WM Broomfield) on their side.

In the past twenty years, they have come a long way. Agenda 21 is being implemented by the International Council for Local Environmental Initiatives (ICLEI) throughout our country. To find out whether they have invaded your city/county, [ICLEI Global Members](#) provides the list. Notice that the United States has the largest number of Agenda 21 geographic locations of any other participating country. Other countries continue to mine and drill for their natural resources, but [Obama chokes off access to our resources](#). If you do not believe it, go to your local gas station and check out the price of gasoline. It was \$1.83 per gallon when Obama took office.

It is important that you know that Article 1, Section 10 of the US Constitution prohibits states and their subdivisions from entering into alliances with foreign operatives. ICLEI is a foreign operative; hence, Agenda 21 is in direct violation of the US Constitution.

A key feature of Agenda 21 is to end property rights in our country and justify/mandate control of where and how we live and work. It is also a redistributive program whereby it transfers America's wealth to the UN oligarchy and other countries as it diminishes our way of life to that of a third world country.

By design, Agenda 21 requires the death of free market capitalism. Why else would Obama continue to destroy our free market system, place more and more private industries and land under government control and broaden Crony Capitalism? Agenda 21 is a vehicle to achieve a transformation of America into something else that will be run by a global oligarchy.

If you think Conservatives are the only ones who are aware and fighting against implementation of Agenda 21, think again. Check out: [DEMOCRATS AGAINST U. N. AGENDA 21](#).

[Nancy Pelosi](#) pushed Agenda 21 – by name – on the House floor and Progressives can no longer deny its existence. [Agenda 21](#) is part of the Progressive agenda that is destroying our country. Wake up and get involved; search for a 912/Tea Party group near you and join the fight to preserve the last vestige of the land of the free and home of the brave.