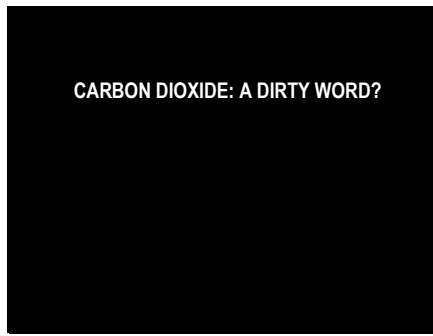


Slide 1

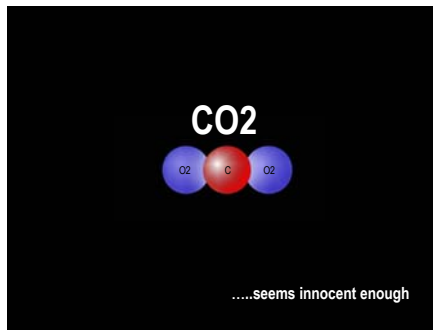


Slide 2



CO<sub>2</sub> or Carbon Dioxide has received a bad name, some deserved but there is more to the story

Slide 3



CO<sub>2</sub> or Carbon Dioxide is a chemical compound = one carbon and two oxygen atoms

Slide 4

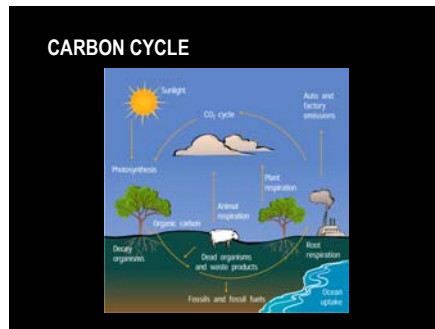
**CO2 SOURCES**

**NATURAL SOURCES**

- Volcanoes
- Combustion of organic material - Fire
- Respiration of living aerobic organisms
- Decay of plants and animals
- Surface of the ocean (which is also a carbon sink)

Carbon may be well known for man-made sources but it is naturally occurring and essential – all part of the natural carbon cycle

Slide 5



Carbon cycle – The carbon cycle is a “checks and balance” system of carbon emitters and sequesters. Carbon is at the same time, a waste and a food.

Slide 6

**CO2 SOURCES**

**HUMAN SOURCES (our carbon footprint)**

- Power generation
- Transportation
- Food Production
- Just about everything we do or consume

Man-made sources of CO<sub>2</sub> create an imbalance in the carbon cycle. Suddenly we are producing much more than is being sequestered or used

Slide 7



The man-made sources of carbon dioxide are continuously growing – as populations grow and as the economies of developing countries, such as India and China grow.

Slide 8



Slide 9



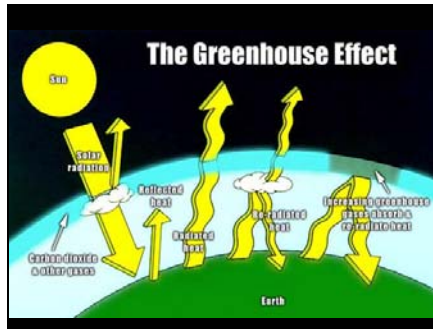
What does one pound look like? The volume of one pound of carbon dioxide is approximately 8.2 cubic feet.

Slide 10

**GREENHOUSE EFFECT**

Carbon Dioxide, the major contributor to greenhouse gas, is essential for life on earth...in moderation

Slide 11



Greenhouse effect – without the greenhouse effect, earth would be 60 degrees cooler than it is and would not sustain life as we know it. However, more greenhouse gases means more heat. - similar to the inside of your car on a hot day

Slide 12



Slide 13

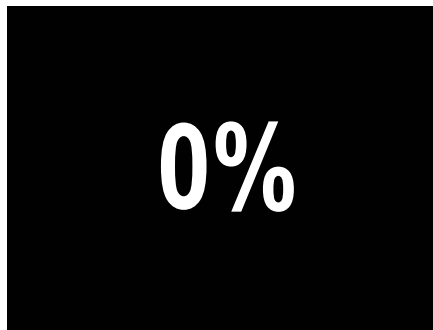


Slide 14



A University of California, San Diego study – reviewed 928 peer-reviewed articles dealing with “climate change” published in the past 10 yrs.

Slide 15



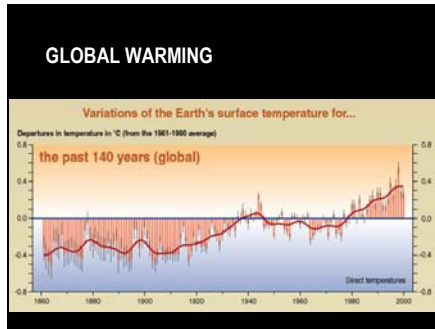
Of those articles, 0% percent are in doubt as to the cause of Global Warming

Slide 16

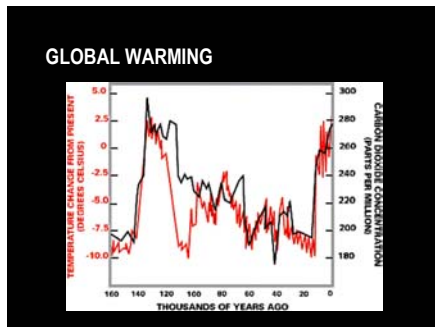


The danger of climate change is becoming increasingly understood

Slide 17

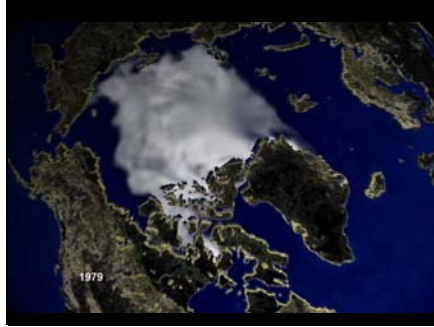


Slide 18



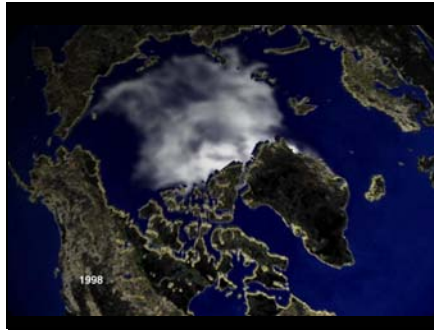
In reading ice cores, Scientists have found a very strong correlation between the level of carbon dioxide in the atmosphere and the changes in global temperature.

Slide 19



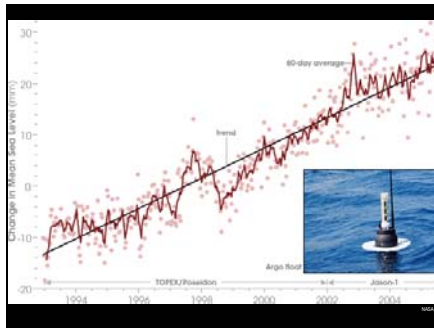
NASA imagery of the polar ice cap during the summer of 1979

Slide 20



NASA imagery of the polar ice cap during the summer of 1998. More than 20% of the ice cap has melted since '79. It has been predicted that the cap will be completely gone by the end of the century and perhaps sooner.

Slide 21



Melting ice needs to go somewhere. NASA has found a consistent rise in global sea level as this graph shows.

Slide 22



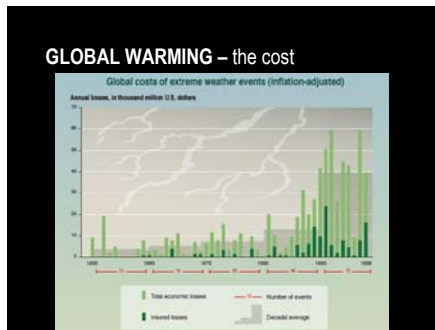
Current day Florida

Slide 23



Florida if the Greenland ice sheet melted. Sea level would rise upwards of 21 feet.

Slide 24



The obvious costs of weather extremes due to global warming are reconstruction of infrastructure, health impacts and loss of economy – think of the Hurricane Katrina aftermath.

Slide 25

**GLOBAL WARMING – the cost**

- Potentially \$6 trillion and up to 20% cost to global economy

In a recent report published by a senior U K economist (Nicholas Stern)

Slide 26

**GLOBAL WARMING – the cost**

- Potentially \$6 trillion and up to 20% cost to global economy
- Economic devastation similar to, and perhaps worse than, the Great Depression

In a recent report published by a senior U K economist (Nicholas Stern)

Slide 27

**GLOBAL WARMING – the cost**

- Potentially \$6 trillion and up to 20% cost to global economy
- Economic devastation similar to, and perhaps worse than, the Great Depression
- Unfortunately such economic and environmental devastation would be most detrimental to those on the "fringe" (developing countries and the poor in developed countries)

Slide 28



Impacts will be greatest on poor/underdeveloped because of location, available resources and lack of “buffer” money/technology/etc

Slide 29

For I was hungry and you gave me food, I was thirsty and you gave me drink...As often as you did it for one of my least brothers, you did it for me.

Mt. 25: 35-40

Slide 30

**GLOBAL WARMING – the cost**

- During 2003 – 21,000 people died in Europe due to excessive heat

## Slide 31

**GLOBAL WARMING – the cost**

- During 2003 – 21,000 people died in Europe due to excessive heat
- During the past 20 yrs. Asthma has grown 4-fold in the U.S.

## Slide 32

**GLOBAL WARMING – the cost**

- During 2003 – 21,000 people died in Europe due to excessive heat
- During the past 20 yrs. Asthma has grown 4-fold in the U.S.
- Air pollution levels increase as temperatures increase  
– *estimates suggest that 15,000 deaths can be contributed to air particulate annually*

## Slide 33

**GLOBAL WARMING – the cost**

- During 2003 – 21,000 people died in Europe due to excessive heat
- During the past 20 yrs. Asthma has grown 4-fold in the U.S.
- Air pollution levels increase as temperatures increase  
– *estimates suggest that 15,000 deaths can be contributed to air particulate annually*
- The World Health Organization attributes 150,000 deaths and 5 million illnesses annually to global climate change

...It is affecting human health – deaths to global warming are the result of heat, pollution, spread of diseases, population displacement, malnutrition, and weather extremes

Slide 34

**GLOBAL WARMING – the cost**

Investments of 1% GDP would be sufficient to curb possible devastating outcomes

-Nicholas Stern (senior U K economist)

Investing 1% of GDP to grow renewable energy technologies, carbon sequestration techniques, etc.

Slide 35

At its core, global climate change is not about economic theory or political platforms, nor about partisan advantage or interest group pressures. It is about the future of God's creation and the one human family. It is about protecting both "the human environment" and the natural environment. It is about our human stewardship of God's creation and our responsibility to those who come after us.

-Pope John Paul II

Slide 36

**CARBON FOOTPRINT**

The world emits approximately 7 billion tons of CO2 annually



Slide 37

**CARBON FOOTPRINT**

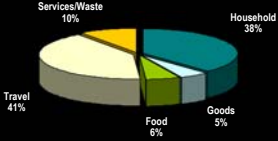
The U.N. reports that the average American household has a carbon footprint of 21 tons per year. That's 42,000 pounds per household!



Slide 38

**CARBON FOOTPRINT**

A typical carbon footprint consists of services/waste, travel, food, goods, and household.



Category	Percentage
Travel	41%
Services/Waste	10%
Household	33%
Food	6%
Goods	5%

Slide 39

**CARBON FOOTPRINT - CONTRIBUTIONS**

Services/Waste	4,200 lbs
Travel	17,220 lbs
Goods	2,100 lbs
Food	2,520 lbs
Household	15,960 lbs

Slide 40

**WHAT CAN BE DONE?**

To avoid a high level of climate-change damage, the world must cut emissions by at least 60% below current levels by the year 2050

-Insurance Australia Group

Slide 41

**WHAT CAN BE DONE?**

Yet you have made them a little lower than God, and crowned them with glory and honor. You have given them dominion over the works of your hands; you have put all things under their feet, all sheep and oxen, and also the beasts of the field, the birds of the air, and the fish of the sea, whatever passes along the paths of the seas. O Lord, our Sovereign, how majestic is your name in all the earth!

Psalm 8: 5-9

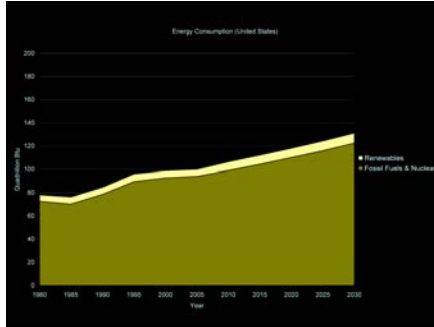
Our faith teaches us that what we as individuals and small groups do effects all life. Indeed faith by its very nature recognizes that we have optimism in what we do – that it will change the world. We are charged with the health of our fellow man and all flora and fauna– care takers.

Slide 42

**WHAT CAN BE DONE?**

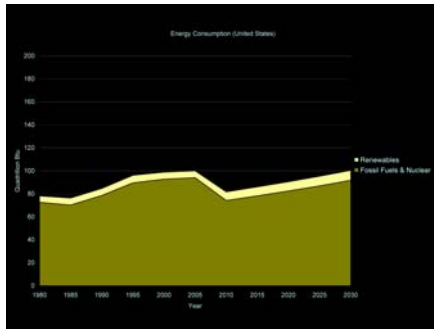
The EPA suggests that the average American family can reduce their carbon footprint by 32% with little or no-cost changes

Slide 43



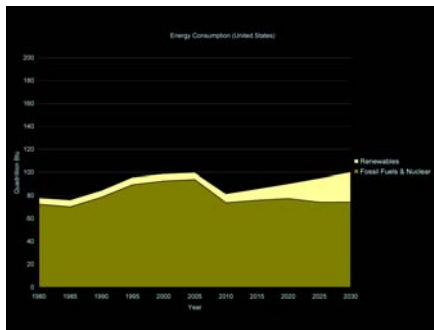
The United States uses much more than it's fair share of energy – and that is not predicted to slow (source: Energy Information Agency)

Slide 44



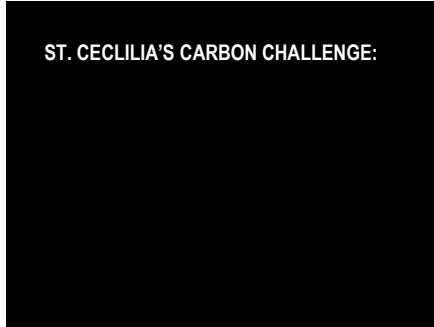
However, if we were to simply reduce our consumption by 25% we would greatly reduce the amount of energy and consequently CO2 that would be produced. Proving that each family can make a big impact.

Slide 45

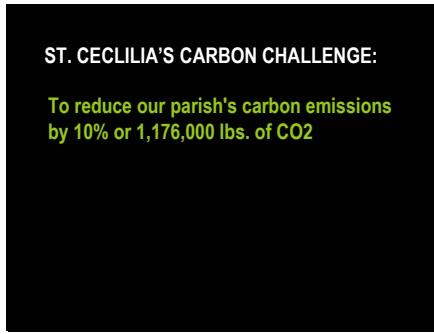


In addition to a 25% reduction in consumption, if we were to increase renewable energy production by approximately 30% over the next 25 years, we would be a long way in reducing CO2.

Slide 46



Slide 47



100 pnts. Per family or 28,000  
per parish

Slide 48



Our religion recognizes that no  
only shall we be upset by  
injustice, but we shall act upon  
that injustice.

Slide 49

**TAKE ACTION – SOME EXAMPLES**

**Food**

- Purchase local (500 miles) and/or organic food and less meat (specifically beef)

Slide 50

**TAKE ACTION – SOME EXAMPLES**

**Goods/Products**

Slide 51

**TAKE ACTION – SOME EXAMPLES**

**Goods/Products**

- Purchase products packaged in reusable/recyclable containers

Slide 52

**TAKE ACTION – SOME EXAMPLES**

**Goods/Products**

- Purchase products packaged in reusable/recyclable containers
- Purchase organic - biodegradable cleaners

Slide 53

**TAKE ACTION – SOME EXAMPLES**

**Goods/Products**

- Purchase products packaged in reusable/recyclable containers
- Purchase organic - biodegradable cleaners
- Purchase high-recycle-content products (post consumer)

Slide 54

**TAKE ACTION – SOME EXAMPLES**

**Goods/Products**

- Purchase products packaged in reusable/recyclable containers
- Purchase organic - biodegradable cleaners
- Purchase high-recycle-content products (post consumer)
- Shop with reusable cloth bags rather than using store paper or plastic bags

Americans use more than 12 million barrels of oil each year to produce plastic grocery bags and 15 million trees for paper bags.

Slide 55

**TAKE ACTION – SOME EXAMPLES**

**Goods/Products**

- Purchase products packaged in reusable/recyclable containers
- Purchase organic - biodegradable cleaners
- Purchase high-recycle-content products (post consumer)
- Shop with reusable cloth bags rather than using store paper or plastic bags
- Purchase products packaged in reusable/recyclable containers – *save 230lbs CO2*

Slide 56

**TAKE ACTION – SOME EXAMPLES**

**Household**

Slide 57

**TAKE ACTION – SOME EXAMPLES**

**Household**

- Replace 3 frequently used light bulbs w/ compact fluorescent bulbs – *save 300lbs CO2 and \$60*

Slide 58

**TAKE ACTION – SOME EXAMPLES**

**Household**

- Replace 3 frequently used light bulbs w/ compact fluorescent bulbs – *save 300lbs CO2 and \$60*
- Turn thermostat down 2° in winter and up 2° in summer – *save 2,000lbs CO2 and \$120*

Slide 59

**TAKE ACTION – SOME EXAMPLES**

**Household**

- Replace 3 frequently used light bulbs w/ compact fluorescent bulbs – *save 300lbs CO2 and \$60*
- Turn thermostat down 2° in winter and up 2° in summer – *save 2,000lbs CO2 and \$120*
- Insulate water heater and keep temperature no higher than 120° – *save 1,000lbs and \$140*

Slide 60

**TAKE ACTION – SOME EXAMPLES**

**Household**

- Replace 3 frequently used light bulbs w/ compact fluorescent bulbs – *save 300lbs CO2 and \$60*
- Turn thermostat down 2° in winter and up 2° in summer – *save 2,000lbs CO2 and \$120*
- Insulate water heater and keep temperature no higher than 120° – *save 1,000lbs and \$140*
- Unplug un-used electronics – *save 900lbs CO2 and \$230*

## Slide 61

**TAKE ACTION – SOME EXAMPLES**

**Household**

- Replace 3 frequently used light bulbs w/ compact fluorescent bulbs – *save 300lbs CO2 and \$60*
- Turn thermostat down 2° in winter and up 2° in summer – *save 2,000lbs CO2 and \$120*
- Insulate water heater and keep temperature no higher than 120° – *save 1,000lbs and \$140*
- Unplug un-used electronics – *save 900lbs CO2 and \$230*
- Place a computer into hibernation when not in use – *save 440lbs CO2 and \$100*

## Slide 62

**TAKE ACTION – SOME EXAMPLES**

**Household**

- Replace 3 frequently used light bulbs w/ compact fluorescent bulbs – *save 300lbs CO2 and \$60*
- Turn thermostat down 2° in winter and up 2° in summer – *save 2,000lbs CO2 and \$120*
- Insulate water heater and keep temperature no higher than 120° – *save 1,000lbs and \$140*
- Unplug un-used electronics – *save 900lbs CO2 and \$230*
- Place a computer into hibernation when not in use – *save 440lbs CO2 and \$100*
- Install a low-flow shower head – *save 350lbs CO2 and \$150*

## Slide 63

**TAKE ACTION – SOME EXAMPLES**

**Household**

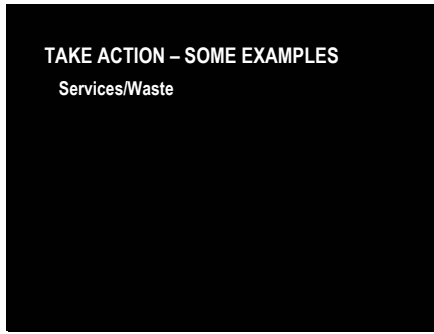
- Replace 3 frequently used light bulbs w/ compact fluorescent bulbs – *save 300lbs CO2 and \$60*
- Turn thermostat down 2° in winter and up 2° in summer – *save 2,000lbs CO2 and \$120*
- Insulate water heater and keep temperature no higher than 120° – *save 1,000lbs and \$140*
- Unplug un-used electronics – *save 900lbs CO2 and \$230*
- Place a computer into hibernation when not in use – *save 440lbs CO2 and \$100*
- Install a low-flow shower head – *save 350lbs CO2 and \$150*
- And so much more.....

Slide 64

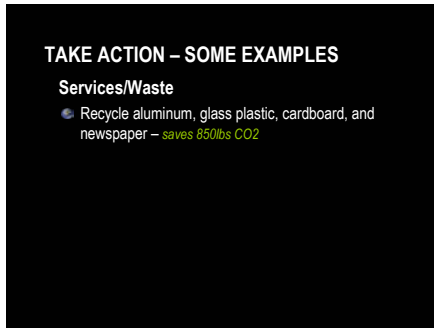


If we were to add up all of the small air gaps and cracks in the average American household, it would be the equivalent of cutting a 9 square foot hole in the wall – open all year long.

Slide 65



Slide 66



Slide 67

**TAKE ACTION – SOME EXAMPLES**

**Services/Waste**

- Recycle aluminum, glass plastic, cardboard, and newspaper – *saves 850lbs CO2*
- Reduce garbage by 25% (reuse/purchase less packaging) – *saves 1,000lbs CO2*

Slide 68

**TAKE ACTION – SOME EXAMPLES**

**Travel**

Slide 69



The Ford Model T

Slide 70

**28 mpg**

100 years ago the Model T achieved 28 mpg

Slide 71



Current American car sales ad

Slide 72

**24 mpg**

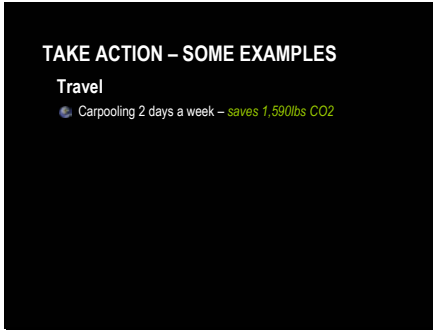
Today (in the United States) we average 24 mpg – 4 less than the Model T (100 years ago)....does that seem right? What happened to “technological advances?”

Slide 73

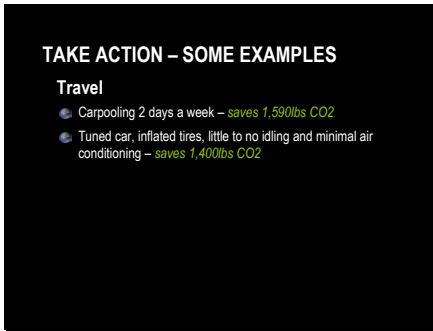


The emissions from the average American commute (one-way) looks a little something like this.

Slide 74



Slide 75



Slide 76

500 million gallons of gas

The Environmental Defense notes that under-inflated tires cost us 500 million gallons of gas yearly in the U.S. Every small thing we do can have huge impacts - if enough of us do it. It starts with us.

Slide 77

**TAKE ACTION – SOME EXAMPLES**

**Travel**

- Carpooling 2 days a week – *saves 1,590lbs CO2*
- Tuned car, inflated tires, little to no idling and minimal air conditioning – *saves 1,400lbs CO2*
- Combine multiple trips (errands) into one – *saves 880lbs CO2*

Slide 78

**TAKE ACTION – SOME EXAMPLES**

**Travel**

- Carpooling 2 days a week – *saves 1,590lbs CO2*
- Tuned car, inflated tires, little to no idling and minimal air conditioning – *saves 1,400lbs CO2*
- Combine multiple trips (errands) into one – *saves 880lbs CO2*
- Less aggressive driving @ speed limits (not to exceed 60 mph when possible) – *saves 1,200lbs CO2*

Slide 79



Slide 80



Slide 81

The image shows a screenshot of a spreadsheet titled "The Carbon Challenge Point System". The spreadsheet has several columns: "Action", "Carbon Reduction (lbs)", "Points Possible", "Frequency", "Points", and "Average % Savings". A red arrow points to the "Action" column. The "Action" column lists various activities such as "Recycle", "Walk or bike", "Use energy-efficient light bulbs", etc. The "Carbon Reduction (lbs)" column shows values like 100, 200, 300, etc. The "Points Possible" column shows values like 1, 2, 3, etc. The "Frequency" column shows values like "Weekly", "Monthly", "Quarterly", etc. The "Points" column shows values like 100, 200, 300, etc. The "Average % Savings" column shows values like 10%, 20%, 30%, etc.

The Carbon Challenge Point System – To calculate your carbon reduction, simply choose an action

Slide 82

The screenshot shows a spreadsheet with columns for 'Carbon Reduction (lbs)', 'Points Possible', 'Frequency', 'Annual Savings', and 'Annual % Savings'. A red arrow points to the 'Carbon Reduction (lbs)' column.

Action	Carbon Reduction (lbs)	Points Possible	Frequency	Annual Savings	Annual % Savings
<b>FOOD</b>					
1. Purchase local, organic, fresh and dry meat (approximately half)	50	10	Weekly	\$100	10%
<b>HOUSE</b>					
1. Purchase products packaged in reusable/recyclable containers	250	50	Weekly	\$500	50%
2. Purchase organic, biodegradable cleaners	100	20	Weekly	\$200	20%
3. Purchase unbleached products	100	20	Weekly	\$200	20%
4. Stop using disposable paper, paper, paper, paper bags	100	20	Weekly	\$200	20%
5. Purchase high quality carbon products (post-processed)	100	20	Weekly	\$200	20%
<b>RECREATION</b>					
1. Purchase 2 frequently used light bulbs or compact fluorescent bulbs	100	20	Weekly	\$200	20%
2. Purchase 4 frequently used light bulbs or compact fluorescent bulbs	200	40	Weekly	\$400	40%
3. Turn bathroom down 2° or more during 2° or warmer	100	20	Weekly	\$200	20%
4. Turn thermostat down 1° or more during 2° or warmer	100	20	Weekly	\$200	20%
5. Use energy efficient light bulbs	100	20	Weekly	\$200	20%
6. Use energy efficient appliances	100	20	Weekly	\$200	20%
7. Use other energy efficient appliances (1.5 inches dia.)	100	20	Weekly	\$200	20%
8. Use low flow shower head	100	20	Weekly	\$200	20%
9. Purchase water heater (one water heater) and keep temperature at 120°F	100	20	Weekly	\$200	20%

Note the possible Carbon Dioxide savings for that action

Slide 83

The screenshot shows the same spreadsheet as Slide 82, but with a red arrow pointing to the 'Points Possible' column.

Action	Carbon Reduction (lbs)	Points Possible	Frequency	Annual Savings	Annual % Savings
<b>FOOD</b>					
1. Purchase local, organic, fresh and dry meat (approximately half)	50	10	Weekly	\$100	10%
<b>HOUSE</b>					
1. Purchase products packaged in reusable/recyclable containers	250	50	Weekly	\$500	50%
2. Purchase organic, biodegradable cleaners	100	20	Weekly	\$200	20%
3. Purchase unbleached products	100	20	Weekly	\$200	20%
4. Stop using disposable paper, paper, paper, paper bags	100	20	Weekly	\$200	20%
5. Purchase high quality carbon products (post-processed)	100	20	Weekly	\$200	20%
<b>RECREATION</b>					
1. Purchase 2 frequently used light bulbs or compact fluorescent bulbs	100	20	Weekly	\$200	20%
2. Purchase 4 frequently used light bulbs or compact fluorescent bulbs	200	40	Weekly	\$400	40%
3. Turn bathroom down 2° or more during 2° or warmer	100	20	Weekly	\$200	20%
4. Turn thermostat down 1° or more during 2° or warmer	100	20	Weekly	\$200	20%
5. Use energy efficient light bulbs	100	20	Weekly	\$200	20%
6. Use energy efficient appliances	100	20	Weekly	\$200	20%
7. Use other energy efficient appliances (1.5 inches dia.)	100	20	Weekly	\$200	20%
8. Use low flow shower head	100	20	Weekly	\$200	20%
9. Purchase water heater (one water heater) and keep temperature at 120°F	100	20	Weekly	\$200	20%

Note the points possible – use this to prioritize what actions you may want to take

Slide 84

The screenshot shows the same spreadsheet as Slide 82, but with a red arrow pointing to the 'Frequency' column.

Action	Carbon Reduction (lbs)	Points Possible	Frequency	Annual Savings	Annual % Savings
<b>FOOD</b>					
1. Purchase local, organic, fresh and dry meat (approximately half)	50	10	Weekly	\$100	10%
<b>HOUSE</b>					
1. Purchase products packaged in reusable/recyclable containers	250	50	Weekly	\$500	50%
2. Purchase organic, biodegradable cleaners	100	20	Weekly	\$200	20%
3. Purchase unbleached products	100	20	Weekly	\$200	20%
4. Stop using disposable paper, paper, paper, paper bags	100	20	Weekly	\$200	20%
5. Purchase high quality carbon products (post-processed)	100	20	Weekly	\$200	20%
<b>RECREATION</b>					
1. Purchase 2 frequently used light bulbs or compact fluorescent bulbs	100	20	Weekly	\$200	20%
2. Purchase 4 frequently used light bulbs or compact fluorescent bulbs	200	40	Weekly	\$400	40%
3. Turn bathroom down 2° or more during 2° or warmer	100	20	Weekly	\$200	20%
4. Turn thermostat down 1° or more during 2° or warmer	100	20	Weekly	\$200	20%
5. Use energy efficient light bulbs	100	20	Weekly	\$200	20%
6. Use energy efficient appliances	100	20	Weekly	\$200	20%
7. Use other energy efficient appliances (1.5 inches dia.)	100	20	Weekly	\$200	20%
8. Use low flow shower head	100	20	Weekly	\$200	20%
9. Purchase water heater (one water heater) and keep temperature at 120°F	100	20	Weekly	\$200	20%

Choose how frequent you take that action



## Slide 88

**Sources/Resources**

- Evangelical Environmental Network & Creation Care Magazine - <http://www.creationcare.org/>
- An Inconvenient Truth - <http://www.climatecrisis.net/>
- Climate.org - [http://www.climate.org/Climate\\_main.shtml](http://www.climate.org/Climate_main.shtml)
- World Health Organization - <http://www.who.int/en/>
- Environmental Defense - <http://www.sightglobalwarming.com/>
- United States Conference of Catholic Bishops - <http://www.usccb.org/dep/international/globalclimate.htm>
- Rocky Mountain Institute - <http://www.rmi.org/>
- EPA (Environmental Protection Agency) - <http://www.epa.gov/>
- NREL (National Renewable Energy Laboratory) - <http://www.nrel.gov/>
- EERE (Energy Efficiency and Renewable Energy) - <http://www.eere.energy.gov/>
- NASA - <http://www.nasa.gov/>
- Minnesota Department of Commerce - <http://www.state.mn.us/portal/mn/jsp/home.do?agency=Commerce>

## Slide 89

**Sources/Resources**

- Xcel Energy - <http://www.xcelenergy.com/>
- Intergovernmental Panel on Climate Change - <http://www.ipcc.ch/>
- Energy Star Program - <http://www.energystar.gov/>
- Energy Information Administration - <http://www.eia.doe.gov/>
- Native Energy - <http://www.nativeenergy.com/>