One for Each Night

A Hanukkah Study Guide for a Brighter Future

נס גדול היה שם

a project of

Georgia Interfaith Power and Light
in cooperation with this congregation

"How many compact fluorescent light bulbs does it take to change the world?"

Welcome!

Hag Sameach and Happy Hanukkah. It is fitting that you have chosen to celebrate the eight nights of Hanukkah by installing a compact fluorescent lightbulb (CFL) each night.

In the Hanukkah story, the small miracle of the oil that burned for eight days stands for the great miracle of Judaism surviving from generation to generation. In the same way, the small "miracle" of a CFL can stand for the greater miracle of changing our use of energy and other resources so that future generations will be able to enjoy the blessings we have.

To best enjoy your celebration, use your kit each night as follows:

1. Locate and remove a light bulb of about 60 watts which is not in an enclosed, dimming, or outdoor fixture (such fixtures would shorten the life of your CFL).
2. After you have lit Hanukkah candles for the evening, proceed to a comfortable spot near the fixture.
3. Install the 13-watt CFL.
4. Read aloud the page numbered for this night of Hanukkah. It includes:
   - a light bulb joke,
   - a few paragraphs explaining one of the many good things you are doing by using a CFL, and
   - a closing blessing or prayer.

To get even more out of this experience, visit Georgia Interfaith Power and Light's website, www.gipl.org, and click on "One for Each Night CFL Guide". There you will find the following:

- Frequently Asked Questions (and their answers)
- Data and reasoning behind the cost and environmental savings cited in this project (spreadsheet which can be downloaded and modified).
- Web links to stimulate your thinking about your next steps to protect the Earth for future generations.
- More light bulb jokes as they become available (yes!)

How is replacing an old fashioned energy wasting light bulb with a miraculous CFL like making a challah?
-- It's done with a twist.

1. Clean City Air

Mazel Tov – we all breathe a little easier because of the 8 pounds of nitrogen oxides and 43 pounds of sulfur dioxide you've kept out of Georgia's air!

Ever driven down the highway and seen an "Ozone Smog Alert" sign, perhaps with a hazy skyline as its backdrop? The power plants that produce electricity for your light bulbs also produce some of the pollutants that contribute to the smog and haze.

The smog alert warns that the air near the ground contains too much ozone. Ozone is a confusing gas: the naturally-occurring "ozone layer," 15-30 miles above Earth, shields us from skin-cancer causing solar rays; however, nitrogen oxides (NO_x) from cars and power plants react with natural gases to form ozone "smog" near the ground, where it irritates the lungs, triggers asthma, and damages crops and trees. For ozone, just remember "good up high, bad nearby."

Ozone is an invisible gas, but the haze obscuring the skyline is made of microscopic particles known as particulate matter (PM). PM is formed in the atmosphere from gases such as NO_x and sulfur dioxide (SO_2) which are emitted by power plants and cars. The particles are sufficiently small that they can penetrate into the lungs and potentially damage the lungs and heart. The EPA is developing tougher standards on PM because of increased concern about its effect on health. Atlanta will violate federal standards for both ground-level ozone and PM until emissions are significantly reduced.

Blessed are You, Spirit of the World, who has given us the gift of life through breath. May we be able to continue to breathe in fresh, clean air, reminding us of humanity's creation.

How is a CFL like a d'var?
-- It lasts a long time and it should illuminate you.

How many chickens does it take to replace an old lightbulb with a CFL?
-- Two: one to change the bulb, and one to cross the road.

2. A More Peaceful World

People take up arms for many reasons. The Maccabees fought to protect religious freedom. You have helped to end a less noble reason used by political leaders to justify war, by sparing two gallons of oil from being imported.

U.S. oil production peaked in 1970, and the US Geological Survey estimates that 89% of world oil reserves lie elsewhere - 40% in the Middle East, 15% in the former Soviet Union, and 34% in other countries, first among them Mexico and Venezuela with about 4% each. The U.S. now imports 54% of its oil. Guaranteeing access to Kuwaiti oil was given as a reason for the 1991 U.S. war with Iraq.

In a few decades or less, world oil production, too, will have peaked. What will happen when there is no longer enough oil to meet wasteful demands? Will people finally wake up to the need to use energy efficiently? One can hope. Or will there be wars to control the remaining oil?

A side note: Oil only accounts for 1% of electric power generation in Georgia, so the impact of your CFLs on oil is limited. You can probably think of ways to change your transportation habits to reduce the oil you burn. Just keeping tires properly inflated can save dozens of times as much oil as your CFL kit.

By your energy-saving actions, you help lead the way to kicking the oil habit, before it kicks us.

Blessed are You, who spreads the canopy of peace over the four corners of the earth. Guide us in the pursuit of peace and wholeness throughout the world.

How many members of our congregation does it take to replace an old light bulb with a CFL?
-- All of them. They spend six months in meetings, focus groups, and online email exchanges discussing it, and when they finally authorize the change, it turns out the administrator installed the CFL months ago.

3. Stabilized Climate

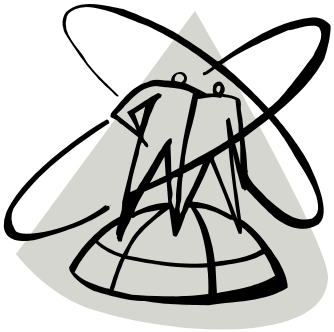
Envision a world not facing a sudden, human-induced shift in climate. Sense that world becoming a little more real as you spare the air 3 ½ tons of CO_2 *your lighting would otherwise have produced.*

Whenever a fuel is burned – gasoline in a car, coal in a power plant, four candles in a Hanukiah – the vast majority of the exhaust is carbon dioxide (CO_2). At first glance this would appear benign: CO_2 is naturally exhaled with every breath, is harmless to human health, and without it, plants could not survive. However, CO_2 accumulates in the atmosphere for decades, acting as a thickening blanket or "greenhouse" to hold in more of the Earth's warmth. Global average temperatures have already risen by about a degree, and most climate experts believe that temperatures will continue to rise as fossil fuel burning injects more greenhouse gases into the atmosphere.

Warmer temperatures may not seem like a bad thing on a cold Hanukkah night. But other effects of a warmed planet – hotter summers, melting glaciers, coastal areas flooded by rising seas or intensified storms, forests and coral reefs not able to adapt to changing temperatures – would not be so welcome. Many of the effects and their severity are still unknown, making global warming akin to a worldwide science experiment whose outcome remains uncertain.

Blessed are You, Creator of All Worlds, who with wisdom created our world in a delicate balance. Let us respect how every being and every act connects us as one life.

How many Reconstructionist Jews does it take to install a CFL?
-- Four. One to bless the gift the old bulb provided, one to say Shehechiyanu, one to change the bulb, and one to bring food.



4. A Nuclear Genie Back in the Bottle

You have helped ease the nuclear genie back into the bottle, by not buying ***658 kWh*** *of nuclear-generated electricity.*

In the 1950's, nuclear electricity was pitched as "Atoms for Peace" and an energy source that eventually would be "too cheap to meter". Today, nuclear still accounts for only 8% of the U.S. energy mix. Largely due to the cost of safeguards, nuclear electricity is more costly than coal, oil, gas, or wind. As for peace, more than one nation has used nuclear electricity to cloak nuclear weapons programs.

Through the Price-Anderson Act, the U.S. government continues to insure utilities against nuclear accident. How big an accident could be was shown in 1986 when a meltdown at Chernobyl in Ukraine severely contaminated an area larger than metro Atlanta, and spread radiation detected as far away as North America.

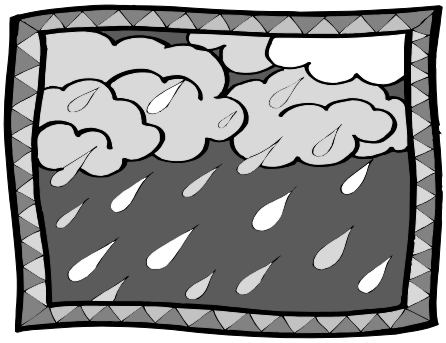
Nuclear wastes remain deadly for thousands of years. Even if wastes can eventually be stored till they are harmless, transporting wastes from reactors to storage presents a risk.

Today, mounting problems with fossil fuels have prompted talk of a comeback for nuclear energy. But by reducing electricity use, we resist having to choose between questionable alternatives.

Blessed are You, Source of Life, who has given us the ability to destroy life and sustain life. Teach us to use our power to support life and growth and to refrain from harm of the earth and other beings.

How many people does it take to change a light bulb at a bat mitzvah service?

-- One, the bat mitzvah. She holds the bulb and the universe revolves around her.



5. A Clean Water Cycle

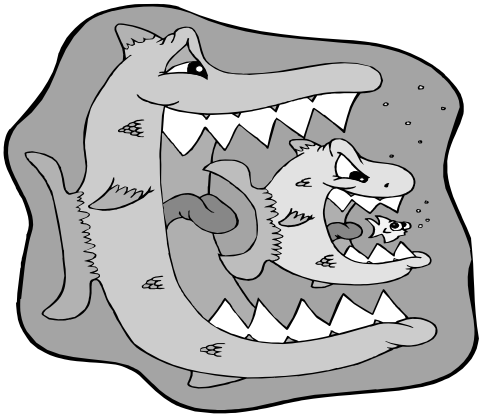
*Tonight, celebrate protecting the water cycle from **43 pounds** of sulfur dioxide and **8 pounds** of nitrogen oxides.*

Power plants produce an alphabet soup of pollutants – CO_2, NO_x, SO_2, Hg, PM, … – when they burn coal and other fuels to generate electricity. Two of these gases – nitrogen oxide (NO) and sulfur dioxide (SO_2) – react in the atmosphere to form acids, and fall to the ground as "acid rain."

Winds can carry the pollution hundreds of miles, and the effects depend on where the acids eventually deposit. In forests, excessive acid weakens trees by leaching soils of their nutrients and minerals. In cities, acid rain damages statues, buildings, and cars. In lakes and streams, the damage is twofold: acid rain can make waters too acidic for sensitive fish and plants to survive, while excess nitrogen deposition can "fertilize" algal blooms that deplete the waters of oxygen.

Blessed are You, Living Waters, who grants rain in its seasons. Help us preserve the lakes, rivers, oceans and all bodies of water, so that all beings can depend on water's sustenance for life.

How many Jewish mothers does it take to replace an old bulb with a CFL?
-- Don't trouble yourself, I'll just sit in the dark.
-- Who needs light? You never visit anyway.
-- I should live so long to need a bulb that lasts eight years!



6. A Safe Food Chain

*Enjoy a fish dinner or imagine an eagle soaring, and think of the **73 milligrams** of mercury you have prevented from entering the biosphere.*

Most of us know mercury as the shiny liquid in old thermometers. But trace amounts of mercury are also contained in coal. Because most power plants burn coal to generate electricity, they represent the largest source of mercury emissions to the atmosphere in the United States.

Mercury deposits from the air onto soils, lakes, and streams, and accumulates in animals along the food chain. That means that as large fish eat smaller fish which have eaten even smaller creatures and algae, mercury becomes more concentrated. When people and birds eat fish at the top of this food chain, they consume mercury, which damages the brain and is especially harmful to fetuses and babies. That's why health advisories often warn pregnant women against consuming certain types of fish, and why there is a surprising link between which light bulbs you choose and which fish are safe to eat.

Blessed are You, Nurturing One, who partners with us to bring nourishment to us through food. May we eat our fill and become more sensitive to the balance of all creatures on earth.

How many Jews does it take to replace an old light bulb with a CFL?
-- 30. One to change the bulb, 29 to kibbitz and share their 30 opinions.

7. Bountiful Land

Pause tonight to picture the abundant and complex life in a mountain forest or stream. Visualize a ***1.6 square foot*** *patch of West Virginia forest, undisturbed by coal mining because of the coal you decided not to burn.*

In Appalachia, coal miners are losing jobs – not because utilities are burning less coal, but because a smaller workforce can do the work using bigger machines. The larger scale of mining also takes a bigger bite out of the landscape. The most stunning version of this is called mountaintop removal.

In West Virginia, layers of coal often lie not far below the top of flat-topped mountains. With gargantuan earth moving equipment (and cheap diesel fuel!) it is not difficult to remove the "overburden" to get at the coal. But what if the overburden includes the forest home of plants and animals? And where will all that rock go as the landscape is reshaped?

Reclamation laws are sometimes ignored, but even when they are followed, a diverse ecosystem has been replaced by a few grass species, and mountain headwaters lie buried under piles of rock that can release acid downstream. Ironically, some of these windswept sites are being considered as locations for the wind turbines that someday will help make coal obsolete.

Blessed are You, the Ancient One who created the earth in its beauty. Grant us the foresight to respect the land that we have been given by working to conserve its natural beauty.

How many utility executives does it take to get everyone to use CFLs? -- Four: One to keep the old power plants going because demand never seems to slow; one to warn that if some people save energy, everyone's rates will go up; one to notice that people are buying CFLs anyway; and one to discover the profitability of selling CFLs to ratepayers .

8. A Gift for the Future

In your mind, wrap a present in your best Hanukkah gift wrap, and set it aside to be opened a hundred years from now. A generation that can put them to better use will open the presents you decided to leave in the ground: ***4 gallons*** *of petroleum and* ***11,500 cubic feet*** *of natural gas.*

If civilization exists a hundred years from now, it will be because people have learned to make peace with the natural systems on which we and all life depend. Such a civilization will have the know-how and the will to keep pollutants out of the biosphere, even as it uses petroleum's valuable organic molecules to make plastics and other synthetics.

The post-fossil fuel civilization will live off solar and other renewable sources, but is expected to store and transport energy in the form of hydrogen. Quiet hydrogen fuel cells will replace the internal combustion engine, emitting only water vapor. As the cheapest source of hydrogen, natural gas can provide the bridge to the hydrogen economy. Saving natural gas can buy time to develop economical ways to extract hydrogen from water.

Someday, people will be amazed that our generation burned up so much irreplaceable oil and natural gas, like burning the furniture to heat the house!

Blessed are You, Sustainer of Generations, who brings together parents and children. May we recognize that this earth will belong to those who will come after us, so that we may keep the earth as a vital gift that is eternal.

How many CFLs does it take to change the world?

-- Just one, if you let it illuminate you.

By the light of your CFLs

You may imagine that the benefits to the planet would be huge if every home used CFLs as you do. You may also suspect that these benefits are only a fraction of the changes needed to pass along the planet in as good a shape as you received it. You are right on both counts.

Throughout history, people like the Maccabees have sacrificed so their children might have a better life. In recent decades we have strayed from this path. Why do we go on burning up assets that belong to the future for the sake of a moment's convenience?

- We don't believe our habits are causing a problem. We assume that the planet is a boundless source of nourishment and sink for waste.
- We believe the alternatives require too much sacrifice. We ignore technologies like CFLs. We assume that a less car-oriented lifestyle would inconvenience us rather than improving the quality of life.
- We don't think individuals can make a difference. We wait for leaders to make the first move.

The real goal of this kit has been to challenge these assumptions. If this CFL kit has illuminated you and stimulated a quest for further enlightenment, you can continue with links on the web site at congregationbethaverim.org. Or order the following titles from your favorite bookseller:

Natural Capitalism by Hawken, Lovins, and Lovins

Cradle to Cradle by McDonough and Braungart

The Natural Step Story by Karl-Henrik Robert

and on a more philosophical note:

The Spell of the Sensuous by David Abram

Acknowledgements

One For Each Night was conceived and created in 2003 at Congregation Bet Haverim, Atlanta (www.congregationbethaverim.org) and is an ongoing project of Georgia Interfaith Power and Light (www.gipl.org), which also publishes the Advent guide, Preparing for a New Light.

Writers:
Daniel Cohan
Bill Witherspoon

Blessings:
Rabbi Joshua Lesser

Jokes:
Audrey Galex
Eliot Robinson
Susan Simon
Bob Schwartz
Alan Sugar
Bill Witherspoon
light bulb joke compilation at
http://members.fortunecity.com/davesfunstuff/13lbulbj.htm

Editor:
Bill Witherspoon

Thanks to Brent Verrill, industrial engineer, who shared his CFL expertise at an early stage of this project

Initial inspiration from:
Georgia Interfaith Power and Light's *2003 CFL Sale*
Coalition on the Environment and Jewish Life's
2002 Hanukkah resources
Decades of effort by
Rocky Mountain Institute *and*
Southface Energy Institute

Special thanks to Rina Rosenberg, Noah Witherspoon, and Sandi Cohan, for your support, patience, and assistance