



The Orthodox Fellowship of the Transfiguration

What Orthodox Churches Can Do to Address Global Climate Change

By Fred Krueger

Climate change affects everyone. Unless we take radical and immediate measures to reduce emissions stemming from unsustainable... excesses in the demands of our lifestyle, the impact will be both alarming and imminent.

- HAH Ecumenical Patriarch Bartholomew

Climate Declaration from the Orthodox Bishops of America

“... Faithful to the responsibility that we have been given within God’s good creation, it is prudent for us to listen to the world’s scientific leaders as they describe changes occurring in the world’s climate, changes that are already being experienced by many people throughout the world.... Three crucial considerations make the current changes serious and unprecedented:

- ◆ The rapid extent of temperature increase is historically unparalleled. Past changes in climate occurred over extended periods of time and were considerably less severe.
- ◆ The human role in changing the climate is unique today. In earlier centuries, people did not have the technological capability to make such radical changes to the planet as are now taking place.
- ◆ The impact that climate change will exert upon society is great and diverse, inevitably including conditions which deeply disrupt the lives and livelihoods of people on an unprecedented scale.

“Climatologists label these changes as the result of measurable increases of carbon dioxide and other so-called “greenhouse gases” in the atmosphere. These gases are produced primarily by the burning or combustion of gasoline, coal and other fossil fuels. Among the many consequences, the atmosphere and the oceans are warming; wind and rainfall patterns are changing; and sea levels are rising. Forces of climate change also increase the acidity of the oceans; they raise the ferocity of storms, especially hurricanes; they cause droughts and heat waves to become more intense; and, in some areas, they disrupt normal agriculture.

“Furthermore, the changes are not occurring evenly: some parts of the world experience drought and others greater rainfall, even flooding. Importantly, the conditions that we observe now are only the early alterations to our climate. Much larger and far more disruptive changes will result unless we reduce the forces causing climate change.

“It should be clear to all of us that immediate measures must be taken to reduce the impact of these changes to the world's climate. If we fail to act now, the changes that are already underway will intensify and create catastrophic conditions. A contributing root cause of these changes to our climate is a lifestyle that contains unintended, but nevertheless destructive side effects. It may be that no person intends to harm the environment, but the excessive use of fossil fuels is degrading and destroying the life of creation. Moreover, the impact of our thoughtless actions is felt disproportionately by the poorest and most vulnerable, those most likely to live in marginal areas. By our lack of awareness, then, we risk incurring the condemnation of those who “grind the face of the poor” (Isaiah 3.15). As Church leaders, it is our responsibility to speak to this condition inasmuch as it represents a grave moral and spiritual problem.

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“Therefore, we wish to emphasize the seriousness and the urgency of the situation. To persist in a path of excess and waste, at the expense of our neighbors and beyond the capability of the planet to support the lifestyle directly responsible for these changes, is not only folly; it jeopardizes the survival of God’s creation, the planet that we all share. In the end, not only is it sinful; it is no less than suicidal.

“But there is hope. Society can alter its behavior and avoid the more serious consequences of climate change. To do this, however, we must work together to reduce the way that we have exploited the earth's resources, especially its fossil fuels. As Americans, we comprise barely 4% of the world's people; yet we consume over 25% of its resources and energy. Justice and charity for our neighbors demand a more frugal, simple way of living in order to conserve the fruits of creation.

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“In order to make the required changes, we are called to pray first and foremost for a change in our personal attitudes and habits, in spite of any accompanying inconvenience. Such is the depth of *metanoia* or repentance. The issue is not merely our response to climate change, but our failure to obey God. We must live in a manner that is consistent with what we believe and how we pray. Our

heart must be “merciful, burning with love for the whole of creation” (Abba Isaac the Syrian, *Mystic Treatises*, Homily 48). At minimum, this means caring about the effect of our lives upon our neighbors, respecting the natural environment, and demonstrating a willingness to live within the means of our planet. Such a change will invariably require reduction in our consumption of fossil fuels as well as acceptance of alternative energy sources such as solar or wind power, and other such methods that minimize our impact upon the world. We can do these things, but it will require intentional effort from each of us.

“Nevertheless, we cannot stop there. We must also learn all that we can about the emerging situation of climate change. We must set an example in the way that we choose to live, reaching out and informing others about this threat.

“We must discuss with fellow parishioners and – since climate change is not only an issue for Orthodox Christians — we must raise the issue before public officials and elected representatives at the city, state and national levels. We are all responsible for this situation, and each one of us can do something to address the problem.

“In each generation, God sends some great tests that challenge the life and future of society. One of the tests for our time is whether we will be obedient to the commands that God has given to us by exercising self-restraint in our use of energy, or whether we will ignore those commands and continue to seek the comforts and excesses that over-reliance on fossil fuels involves.

“One of the tests for our time is whether we will [obey God’s] commands ... by exercising self-restraint in energy use..., or will we ignore those commands and... seek the excesses that over-reliance on fossil fuels involves.”

“At every Divine Liturgy, we pray for seasonable weather. Let us enter into this prayer and amend our lives in whatever ways may be necessary to meet the divine command that we care for the earth as the Lord’s. If we can do this, if we can render our lives as a blessing rather than a curse for our neighbors and for the whole creation, then, God willing, we may live and flourish. This is not an optional matter. We will be judged by the choices we make. The Scriptures bluntly tell us that if we destroy the earth, then God will destroy us (see Revelation 11:18).

“Let us all recall the commands of God regarding our use of the earth. Let us respond to the divine commandments so that the blessings of God may be abundantly upon us. And let us responsibly discern the right, holy and proper way to live in this time of change and challenge. Then we shall “perceive everything in the light of the Creator God” (St. John Climacus, *Ladder of Divine Ascent*, Step 4,58).”

- The Orthodox Bishops of America,
SCOBA Climate statement, May 25, 2007

Recommendations on what you can do

Here are actions that parishes and individuals can take to address climate change:



At Home

- ◆ Remember that climate change is serious, in fact, it is one of the most serious issues ever to face civilization. How you respond is important. Smaller degrees of change in the past have destroyed civilizations.
- ◆ Become energy independent. Find ways to use solar or wind power instead of electricity from the utility grid. Generally minimize your use of energy, especially if you are still using energy derived from fossil fuels.
- ◆ Eat lower on the food chain. Whenever possible, buy locally grown, organic foods. Stop eating beef. The raising of cattle produces a lot more greenhouse gases than any other food. This is one of the most important dietary changes that a family can make. The added benefit is that less beef is a healthy choice.
- ◆ Travel less. Avoid unnecessary trips and refrain from unneeded long distance travel. Plan vacations close to home. Work close to home and avoid long commutes. Transportation is the biggest source of excess carbon dioxide in the atmosphere.
- ◆ Change your lights. Replace conventional incandescent bulbs with compact fluorescent bulbs. This single action will help you save on electrical bills. Typically this can reduce electrical energy bills by over one-third.
- ◆ Heat and cool smartly. Clean air filters regularly. Lower the thermostat in winter and raise it in summer. When it's time to replace old equipment, choose a high efficiency model. Turn your water heater thermostat down to 120° F.
- ◆ Reduce, Reuse, Recycle, Repair and Refuse. Support the recycling programs in your community. Recycle newspapers, bottles, paper and other goods. Use products that can be recycled and items that can be repaired or reused. Support recycling by buying products made from recycled materials. Reducing, reusing, and recycling helps conserve energy and restrains pollution and greenhouse gases. The biblical command to “replenish the earth” translates into what we today call recycling.

- ◆ Use water efficiently. Municipal water systems use a lot of energy to purify and distribute water. Saving water, especially hot water, lowers greenhouse gas emissions. Wash clothes in warm or cold water. If you can, dry clothes on a clothesline instead of in a dryer
- ◆ Unplug “energy bandits” like cell phone chargers when not in use. Turn off lights when they are not in use.
- ◆ Spread the word. Tell family and friends that energy efficiency is good for their homes and the environment because it lowers greenhouse gas emissions.



At Church

- ◆ Teach by example. Set a good example of Orthodox care for God’s creation by demonstrating recycling and purchasing recycled materials. This helps reduce emissions. Discuss climate-friendly choices as moral responsibilities.
- ◆ Study the issues. Understand how greenhouse gases trap heat and disrupt atmospheric chemistry. As carbon dioxide levels rise, and this is measureable, the world warms causing a series of changes to take place. Learn about these changes. Both scientists and religious leaders tell us that this is the single largest issue facing our generation.
- ◆ Use green energy. Green energy is environmentally friendly electricity that is generated from renewable energy sources such as wind and solar. You can either buy green power from your utility or modify your parish to generate your own energy - by installing a solar hot water heater or photovoltaic panels on the roof.
- ◆ Purchase with awareness. Avoid throwaway products or anything that contains toxic substances. When possible, buy locally produced products. Avoid plastic products, styrofoam and all toxic materials.
- ◆ Encourage car-pooling to and from church. This has the side effect of helping to build community and personalizes relationships. Find a way to provide a ride-share program for those who travel a long distance to and from the parish.
- ◆ Respect God’s creation. Care for the earth demonstrates love for God who gives us the world as a gift. It is secular society which promotes a utilitarian view and approach to the physical creation.

- ◆ Manage office equipment energy. Office equipment often uses energy even when idle or on stand-by. Always activate the power management features on your computer and monitor. Turn off equipment and lights when not in use.
- ◆ Teach Sunday school pupils about climate change and ecosystems. Include the biblical commands to respect and care for the earth. Respect for creation is a fundamental responsibility of clergy and parents so that young Christians know that they are to care for the gift of the world.
- ◆ Reduce, reuse, repair and recycle. Show students how to recycle parish materials. This means recycling classroom paper, newspapers, beverage containers, electronic equipment and batteries. Reducing, reusing, and recycling at school and in the classroom helps conserve energy, and reduce pollution and greenhouse gases from resource extraction, manufacturing, and disposal. You can reduce, reuse, and recycle at school or in the classroom by using two-sided printing and copying, buying supplies made with recycled content, and recycling used printer cartridges. For your old electronics, donate used equipment to other organizations, or investigate leasing programs to ensure that used equipment is reused and recycled.



On the Road

- ◆ Travel less. Minimize optional or unnecessary travel. Drive a fuel efficient vehicle. Choose a vehicle that gets the best gas mileage. Eliminate frivolous uses of fossil fuels that are polluting of the air and environment. Find ways of recreation that are clean and healthy. Excess use of fossil fuels harms our neighbors and unnecessarily harms the world.
- ◆ Avoid larger vehicles as best that you can. Generally the smaller the vehicle, the less fuel it will use – and the less it will pollute the planet. Today, because fossil fuels measurably raise carbon dioxide level in the atmosphere, this is a serious issue. If you can afford it, drive an electric solar powered vehicle.
- ◆ Reduce vehicle emissions. Drive at the speed limit. This reduces the nation's dependence on oil and saves money. Burning gasoline and other fossil fuels releases carbon dioxide (CO₂) and contributes to climate change.
- ◆ Give your car a break. Use public transportation, carpool, walk or bike whenever possible to avoid using your car. When possible, combine errands into one trip.
- ◆ Drive smart. Emphasize fuel economy; go easy on the brakes and gas pedal, avoid hard accelerations, reduce time spent idling, and unload unnecessary items in your trunk to reduce weight. For perspective every 60 pounds of additional weight in your vehicle causes about a 1% reduction in gas mileage.

- ◆ Keep your vehicle well tuned. A well-maintained car is more fuel-efficient, produces less greenhouse gas emissions, and is more reliable and safer! Use the recommended motor oil. Check and replace your air filter regularly.



In Government

- ◆ **Limit power plant pollution**

One of the best ways to reduce climate pollution is to target the single greatest source of carbon pollution: coal fired electrical power plants. We can also support the EPA's Clean Power Plan which establishes national standards for the first time ever. Renewable energy and energy efficiency are key pillars to reduce carbon emissions. The EPA's plan was finalized in the summer of 2015. However, fossil fuel corporations and their surrogate legislators still continue to try and block the plan to benefit coal companies.

- ◆ **End fossil fuel subsidies**

Around the world, for every dollar spent to support renewable energy, six more dollars are spent on fossil fuel subsidies. These subsidies were originally intended to protect companies and consumers from fluctuating fuel prices, but what they now do is keep dirty energy companies very profitable. In other words we are actually subsidizing the very behavior that is destroying and polluting the atmosphere of our planet.

- ◆ **Phase out super-polluting HFCs**

Hydrofluorocarbons (HFCs) are a group of chemical compounds used in industrial processes, especially air conditioning and refrigeration. Since HFCs do not harm the ozone layer, decades ago companies began using them instead of other chemicals that were known to be damaging the earth's protective ozone layer. Unfortunately, HFCs aren't good for the climate. When it comes to trapping heat, they are thousands of times more potent than carbon dioxide during the first few years they're emitted, earning them the name "super pollutants." The U.S., China and the EU have agreements to reduce the use of these chemicals.

- ◆ **Stop methane leaks**

About 1/3 of the warming the world is now experiencing is due to methane (natural gas) and similar climate pollutants. In the U.S., natural gas production and distribution is the biggest source of methane leaks. Fixing

these leaks is key. Natural gas companies and utilities should improve monitoring of natural gas leaks, but a national policy to reduce leaks would ensure that all sectors of the natural gas industry does its part. Lawmakers are starting to understand the threats of methane. In 2014, Colorado was the first state to adopt regulations curbing methane pollution. In 2015, the White House announced plans to limit methane emissions. For perspective methane is 84 times more potent as a greenhouse gas than CO₂ although its life in the atmosphere is shorter.

◆ **Reduce fertilizer pollution**

Fertilizer is the engine of agriculture, and helps crops grow abundantly. But if it's applied excessively, what is not used converts to nitrous oxide, a greenhouse gas 300 times more potent than carbon dioxide. Many farmers calculate precise levels of fertilizer to avoid this problem, saving money and reducing waste. However, it will require education to fix the problem fast enough to make an impact on climate change. To enlist farmers and corporate agriculture to support this, we're fighting historical laxness across the food supply chain — starting with retailers who sell mass quantities of grain-based products — and encouraging them to buy from suppliers who use fertilizer-efficient methods. Walmart is such a retailer, and the impact has been huge: Fifteen major food suppliers representing 30% of all food and beverage sales now require fertilizer efficiency programs. A further problem of fertilizer runoff is that it causes huge dead zones (hypoxia) in the ocean where rivers meet the sea.

◆ **Encourage Congressional Support for International Climate Agreements**

The entire world needs to adjust to the era of climate change. We all need to embrace the changes that are essential. Congress is responsible for international agreements and so this is where letters should go requesting action to ratify these agreements to reduce greenhouse gas emissions.

◆ **Promote a Fee on the Use of Fossil fuels**

This is an important political request as it will raise the cost of coal, gas and oil, but return a dividend to fee payers. This will allow clean sources of energy to become more economical and tilt the field away from fossil fuels and toward solar and wind power. There are three categories to this proposal:

1. Place a steadily rising fee on fossil fuels (coal, oil and gas)

To account for the cost of burning fossil fuels, an initial fee of \$15/ton is proposed on the CO₂ equivalent emissions of fossil fuels, escalating \$10/ton/year, imposed upstream at the mine, well or port of entry. Accounting for the true cost of fossil fuel emissions not only creates a level-playing field for all sources of energy, but also informs consumers of the true cost-comparison of various fuels when making purchase decisions.

2. Give 100% of the net fees back to households

One hundred percent of the net income from the carbon fee is held in a Carbon Fees Trust fund and returned directly to households as a monthly

dividend. The vast majority of households will receive more than they will pay for increased energy costs. This feature will inject billions into the economy, protect family budgets, free households to make independent choices about their energy usage, spur innovation and build aggregate demand for low-carbon products at the consumer level.

3. Use a border adjustment to stop business relocation

Import fees on products imported from countries without a carbon fee, along with rebates to US industries exporting to those countries, will discourage businesses from relocating where they can emit more CO₂ and motivate other countries to adopt similar carbon pricing policies. Existing tax and trade systems avoid complex new institutional arrangements. Firms seeking to escape higher energy costs will be discouraged from relocating to non-compliant nations (“leakage”), as their products will be subject to import fees.

◆ Inform Government Officials and Your Elected Representatives

Write your legislators and ask them to address climate change. Tell them what the Orthodox Church in its examination of the climate issue has found. For perspective every major religious organization in America that has studied the climate challenge has found that it is far more urgent than expected, that it requires action right away, and that we are all responsible. In this regard organized religion in America is now becoming a unified voice on the urgency of addressing global climate change.

◆ Support Climate Justice

One of the ironies of global climate change is that the poorest nations of the world, primarily in the global South, are experiencing the brunt of the initial impacts. That is where drought, food shortages, blazing heat and storm intensities are most acute. However human-caused climate change has arisen primarily in the industrialized North where developed nations have most used fossil fuels. Justice means that the developed nations who have contributed the most to this problem should extend help to those who are especially victimized by the rise of carbon dioxide in the atmosphere, and yet have little means to reduce or mitigate the damages from climate change.

◆ Promote Public Transportation

After World War II, Americans enjoyed a marvellous public transportation system. Oil, tire, and auto manufacturers bought up these transport systems on the premise that private automobiles were a more convenient and certainly more profitable. Now we again need public transportation and we should encourage government to provide alternatives to the private automobile as already exists in most European cities and towns.



Around the World

◆ Protect and Restore Tropical Forests

Trees in the tropics are critical to tackling climate change. Deforestation plays a huge role in fueling climate change. A ground-breaking new study indicates that tropical forest conservation could account for as much as 50% of the solution to climate change.

The average American contributes about 18 tons of CO₂ into the atmosphere every year. But by planting a dozen trees in the tropics, each of which will retain about a ton-and-a-half of carbon dioxide over thirty years, a person can zero out his or her carbon debt.

Trees in the tropics are different from temperate zone trees because they create a cloud cover that bounces the rays and heat of the sun back into space. This is why tropical forests have a special role to play in the global effort to restrain the rise of greenhouse gases. In this way protecting forests can mitigate its harmful effects and prevent further damage.

◆ Action is far cheaper than inaction

Many reports have studied the cost of climate change action. Some countries worried that the costs of tackling climate change (prevention, mitigation, adaptation, etc) will be prohibitive and would prefer to deal with consequences. They hope the consequences will not be as bad as scientists have predicted.

Several studies report that the impacts of climate change and the continuation of a carbon-intensive economy will cost the world around \$1.2 trillion a year — 1.6 per cent of the total global GDP (gross domestic product), states the 2012 'Climate Vulnerability Monitor.' These costs include human health issues to economic sector pressures, extreme events and environmental concerns.

In contrast, shifting the world economy onto a low-carbon footing will cost around 0.5 per cent of GDP. As studies point out, this is significantly lower than the actual and projected costs of responding to climate change and maintaining a carbon-intensive economy.

The report warns that the impact of the expected increase in temperature and carbon-related pollution could double the actual costs to 3.2 per cent of GDP in 2030, and will cause six million deaths every year, up from 4.5 million each year.

◆ Climate Justice and the Green Fund

Around the world climate change is creating new levels of heat waves, disrupting established climate patterns, raising ocean levels, and unleashing new diseases, but within human society, it is particularly a matter of justice. The richest countries caused the problem, but it is the world's poorest who are already suffering from its effects.

To address those poor countries who are unable to protect themselves from the ravages of climate change, the United Nations has set up a Green Carbon Fund (GCF) to help these people adapt to a changing climate. Those countries who have been most responsible for changing the world's atmosphere are asked to contribute to the costs of climate change.

This money will help the least developed countries adjust to a changing world. Adapting to rising sea levels and unstable weather patterns is a matter of life and death for these countries. Some of this money will help create systems and infra-structure to cope with the effects of climate change now.

If adequately funded by the world's major countries, the GCF can become an engine for sustainable economic growth throughout the developing world. It's an opportunity to not only invest in avoiding the worst impacts from global climate change, but it's also a driver of economic growth that will create new infrastructure, raise the standard of living, and create jobs throughout the developing world.

Conclusion

The scientific consensus on climate change is clear. The National Academy of Sciences and the scientific organizations from every major country in the world unequivocally state that Earth's climate is changing because of human use of fossil fuels. We must now reorganize our economy which has been built around cheap energy, and reestablish it on clean, renewable sources of energy.

The religious consensus is equally clear. Study commissions by churches unanimously find that the climate issue is more urgent than previously understood and that action is needed now. Our moral, ethical and spiritual responsibility is to do everything possible to reduce the use of carbon fuels and switch over to clean renewable sources of energy. This is an issue of repentance now that we understand the deadly implications of widespread use of fossil fuels.

As the Orthodox bishops of America have jointly declared, addressing global climate change is the challenge of our generation.

The OFT is endorsed by the Assembly of Canonical Orthodox Bishops of North America

🌿 1100 Hughes Avenue 🌿 P.O. Box 7348 🌿 Santa Rosa, CA 95407 🌿 (707) 573-3161 🌿