

# Energy

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## **Buddhists, Shanghai**

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Encouraging monks, nuns and monastery staff to save energy including water, electricity and gas etc:

- \*Turning off the tap while brushing your teeth or rubbing soap during shower;
- \*Fixing dripping taps, and repair broken or leaking pipes in time;
- \*Only taking the amount of water you need
- \*Developing habits of turning off lights and electrical devices including chargers when no one is using them;
- \*Reasonable use of air-conditioning: the temperature should be controlled carefully, neither too high nor too low, with the emphasis on not wasting energy because of a greedy desire for warmth or cool;
- \*Using energy-efficient lighting and wisely placing light bulbs etc to make them most effective
- \*Trying to install solar panels where conditions permit, to provide clean energy;
- \*When buying a computer for the monastery, to give priority to laptops to reduce energy consumption.

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...\*making the best use of monastery's vehicles, including carpooling. This would both save energy and reduce harmful gas emissions.

## **Christian**

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### ***Australian Catholic Bishops***

Faith-consistent use of assets

- Undertake individual and organisational environmental audits, such as those developed by Catholic Earthcare, for tracking and reporting their progress towards reducing their ecological footprint.

### ***Alexandria and All Africa***

- On a parish level:
  - .....Saving on energy within ecclesiastical buildings through the necessary insulation and control of light.

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- On a Diocesan level:
  - Finding ways of producing and using alternative forms of energy (solar, wind and biological).

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i) The Patriarchate of Alexandria calls upon all in Africa to appeal to the Assemblies of the United Nations for the Environment and Development (UNEP).

This appeal should request:

(ii) According to Christian instruction regarding the use of resources, every effort should be made toward the satisfactory use of energy. This would demand a lowering of taxes on the costs of insulation material and the abolishment of subsidies on the production and use of non-renewable sources of energy that are particularly detrimental to the environment. It would also require a raising of taxes on other sources of energy like coal and petrol in order to restrict their use.

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The building that is to host the Centre is to be constructed along ecologically-friendly lines and is to serve as an example of buildings that conserve energy and make use of renewable sources of energy like solar power.

At the same time, efforts will be made to promote and display, in a specially prepared exhibition area, ecological projects and proposals

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- a) The supporting of Declarations of Conference of the European Churches at the Orthodox Academy of Crete in 1995 with the topic "Ecology and Development" and specifically the relation to the responsibilities of Churches for the protection of the Environment. These challenges could, for instance, be met:
  - ....By promoting everyday measures for environmental protection, the prevention of biodiversity, energy savings and systematic environmental auditing in parishes and all church-related institutions.

### ***American Vineyard***

4. Support Best Church Practices for creation care congregations.

Purpose: to develop environmental quality standards for model congregations to set the pace for growth in environmental stewardship among American evangelical churches.

The "Best Practices" would be specific to evangelical church congregations and include such things as energy audits, energy conservation, environmental stewardship policies to be adopted by local church and denominational boards... ..These could be promoted through the existing creation care organizations, a Creation Care Church Clearing House, and the Annual Creation Care Leadership Summit.

## ***Armenian Church***

### Promoting the Use of Renewable Energy

Given the geographical location, Armenia has a significant potential of solar energy, which is currently under-utilised. The area surrounding Lake Sevan, wherein lies the Vazgenian Theological Seminary, is considered one of the best regions for high solar radiation potential, with an average of 1720kWh/ m<sup>2</sup> annually.

The project for the installation of solar powered water-heating systems, integrated into centralised heating and hot water supplies, is implemented in cooperation and on a co-sharing basis with the WCC Armenia Interchurch Charitable Round Table Foundation and the United Nations Development Programme/ Global Environment Foundation's (UNDP/GEF's) "Armenia - Improving the Energy Efficiency of Municipal Heating and Hot Water Supply" project. The total budget of the project is \$35,500 USD. The subcontractor of the project is "SolarEn LLC" - a specialized organisation with extensive experience in assembling and installing hot water supply solar-powered systems in Armenia.

The 60 square meters of the solar panels will satisfy the hot water demand for the 90 students and seminary staff, providing annually 1,500 cubic metres of around 45<sup>0</sup>C hot water, thus will spare the annual use of 10,000 cubic metres of natural gas. Apart from the environmental impact, this project also has an ideological angle, as it will demonstrate the leading role of the Church in using alternative energy resources with the view of its expansion in the country.

### Next Steps

1) The hot water solar production can be implemented in 5 church-affiliated summer camps and guesthouses in Armenia: the diocese of Kotayk holds a summer camp in Tzakhkadzor, the diocese of Syunik holds a summer camp in Eghegnadzor and the diocese of Gugarq runs a summer camp in Vanadzor. In order to increase the use of solar heating systems in church-run institutions, as well as in rural areas of the country, negotiations are already underway to secure the required financing from potential funding institutions.

2) Apart from the summer camps, the church has several guesthouses in the region, particularly in the Mother See of Holy Etchmiadzin and near the Haghpat Monastery.

The Haghpat Monastery, along with the other monuments of that region, is one of the most visited sites in Armenia. In the future it is logical that it be included in the environmentally friendly tourism promotion project in Armenia, implemented by the church, which is currently in negotiation.

These ambitious plans are in conception stage and will require a lot of organisational and construction work. That said, it is already possible to take several steps in the right direction. The implementation of solar heating system in the above mentioned sites will allow the reduction of the operating costs of church occupied buildings and the promotion of resource conservation and eco-friendly management. The installation of a solar heating system in the guesthouse of the Mother See in Holy Etchmiadzin may be also seen as very important in the sense that it has visitors all year round, and so the initiative will contribute greatly to the advertisement of renewable energy resources in Armenia.

3) In the neighbourhood of Lake Sevan there are 10-14 villages with 20,000 inhabitants, consisting in the main of Armenian refugees from Azerbaijan, and supplied by the diocese of Gegharkunik. If solar powered heating systems are introduced in a few public locations here (such as kindergartens, public baths etc.), not only it will cut sizable expenses in this economically poor and disadvantaged region, but will also prevent the tree cutting in the forests, thus boosting the forestation in the country.

Energy efficiency: The use of renewable energy sources must be considered in the broader context of energy saving. The introduction of environment and energy audits at seminaries and church administrative buildings is currently being discussed with several specialised organisations and donor-assistance projects. It is planned to conduct an energy audit in nine administrative buildings, four dormitories of the brotherhood and three seminaries. The audit recommendations will provide guidance and measures to reduce the energy consumption at these facilities. With appropriate financing in place, the smart energy planning can be introduced already at the design/ conception stage of newly constructed, church-occupied buildings. As a first step, for example, energy efficient lamps can be installed in the administrative building of Etchmiadzin and in the seminary. The energy savings can then be calculated and used to support and justify the feasibility of expanding that practice.

### ***Presbyterian Church of Cameroon***

#### Energy Conservation

- Fuel efficient cookers for communities / PCC boarding educational facilities

#### Biogas Plants

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ACTIVITY	INSTITUTION/ACTORS	TIME	OBSERVATIONS
Energy Conservation -Fuel efficient cookers for communities / PCC boarding educational facilities Biogas Plants	- PCC Development Department - Prescraft - All PCC Institutions - Rural Communities	2010 – 2017	Construction / provision of efficient cookers will significantly reduce exploitation of forest for Community fuel needs while biogas facilities for boarding schools will provide alternative eco-friendly energy sources.

**CBCEW**

Energy Use – Switching to low energy appliances like light bulbs are well known and simple ways to reduce energy consumption, but more can be done by considering ethical energy suppliers and making sure everywhere is insulated.

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The buildings and land holdings associated with the Catholic Church of England and Wales could helpfully be the subject of environmental audits.... for example, by implementing standards that require us to care about energy use, water, recycled materials, sustainable wood and other raw materials, ....

***Catholic Coalition on Climate Change***

The Pledge asks Catholics:

- TO LEARN about and educate others on the causes and moral dimensions of climate change.

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1. Assets: what are we doing to lower the carbon footprint of our facilities, protect church-owned land?
  - Facilities: The Coalition will partner with the U.S. government’s Environmental Protection Agency and their “ENERGY STAR” program. This program offers a variety of tools and techniques for individuals and institutions to reduce their energy use. In particular, we will seek their assistance to encourage our thousands of parishes, schools, hospitals, and other facilities to become certified as “ENERGY STAR” congregations or buildings.

Several dioceses are already beginning this process through the diocesan facilities managers.

With nearly 18,000 Catholic churches, 8,000 elementary and secondary schools, countless buildings housing charitable organizations and hospitals and health care facilities, the Catholic community can have a tremendous impact on the amount of energy we can save and reduce our carbon footprint.

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- Health Care: we want to particularly highlight the growing work of the Catholic Health Association of the United States (CHA) and its members (they were the recipients of one of our 2008 incentive grants). Health care organizations are among the biggest consumers of energy and largest producers of waste. In seven years, the efforts already begun in many Catholic sponsored health care systems and facilities and with the support and encouragement of CHA will be greatly expanded. Efforts will include decreasing energy usage in operations by auditing energy use, replacing equipment with energy efficient products, and, when possible, using renewable energy sources. Catholic health care will also continue to decrease energy use in the design and conduction of buildings and encourage employees and members of their communities to be environmentally responsible.

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- Bulk purchasing of renewable energy and green products: the Coalition will explore with facilities managers and others ways to use the collective purchasing power of our institutions (locally, regionally and nationally, where possible) to reduce the costs of such resources and materials.

Again, such practices will become opportunities for users to see the benefits of this approach and implement them in their own lives.

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The Coalition will work closely with Catholic conference staff at the state level to assist them in making the case for care of creation and the poor to state and local legislators. For example, the Catholic bishops of Texas recently asked the Coalition for advice and language for a public letter raising questions about the efficacy of building new coal-fired power plants.

### ***Church of Norway***

That there must be a considerable increase in the research in and the use of renewable energy.

- that the extraction of petroleum will be carbon neutral as soon as possible. As a petroleum producer and a manager of enormous incomes from this production, Norway has a particular responsibility. This responsibility must have the effect:
- that the petroleum industry does not lead to increased strain on vulnerable environments, particularly not in Arctic and other northern areas.
- that foreign investments of the Government Pension Fund be moved to sectors promoting climate-friendly energy.

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The UN Development Programme has stated that the consumption of resources in industrialised countries must be reduced to one tenth of the present level in order to be globally sustainable. Political authorities must implement necessary measures and demand that we all contribute.

We must all renounce some of our consumption for the benefit of the fellowship.

Thus, political authorities must:

- present clear requirements to industry and formulate necessary regulations.
- adopt courageous and unpopular resolutions demanding something from us all.

Thus, there is urgent need for a national strategy and an action plan for sustainable development.

### ***Church of England***

#### Canterbury and Rochester

These Dioceses' joint team is presenting the motion by Exeter Diocese on green energy tariffs and renewables systems (see page 23) to Rochester's Diocesan Synod. It is also developing guidelines by the Diocesan Advisory Committee (DAC), advice on greening of churches, and a churchyard project with partner organisations. „Eco-congregations“ are being developed across both dioceses.

Canterbury Cathedral, the Mother Cathedral of the Anglican Communion, is committed to reducing its carbon footprint. In addition to its ongoing energy- saving efforts, in March 2009 the cathedral took part in Earth Hour, the international event to raise awareness of the need for action against global warming. Promoted in the UK by the WWF, Earth Hour saw many famous landmarks and well-known individual people across the globe turn off their lights for an hour, in a gesture of the need to tackle climate change.

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#### Salisbury Diocese

Salisbury Diocese has an environment working group, advising on carbon calculation, Eco-congregations and other green issues. It has been taking a presentation to all deanery synods, giving a clear picture of the problem and what to do about it.

Deanery representatives are to present the collective and personal challenges to PCCs, who in turn should carry out energy audits, measure their footprints, and declare actions to be taken.



Salisbury Cathedral celebrated its 750th anniversary in March 2008 with a new low-energy floodlighting installation, which also minimises light pollution.

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#### Gloucester Diocese

Gloucester has set up a new fund for environmental investments, based on contributions from its electricity supplier Ecotricity, in exchange for signing-up church members to its service. Projects supported by the Environment Fund must help shrink the diocesan carbon footprint. It is planned to offer churches investment in low-energy LCD floodlights, to cut emissions and showcase low-impact technology for churches.

The Diocese will pay the initial cost and recoup it from a share of savings in energy bills; proceeds to be ploughed back into the Environment Fund.

The Gloucester team on environment and sustainable development aims to explore the scope for collaborations with other dioceses in the region on similar joint funding schemes, for example to build renewable energy installations where suitable on church land. Gloucester Diocese is a partner with Exeter in the new South-West Network of Dioceses for Environmental Action (right).

The Diocese has set up a „Gloucestershire Churches Environmental Justice“ network for awareness-raising, exchanges of information, ideas and project experience between Church activists in the county.

The Cathedral has been assessed by the Carbon Trust to identify the scope for energy savings and more energy efficiency, and energy and environmental policies are planned for the Cathedral. In 2009 an exhibition on environmental issues, technologies and energy saving was held in the Cathedral. In 2009 the Lent Prayer Guide included „Green Prayers“ and a call for „carbon fasting“ as part of Lenten observance.

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South-West Network of Dioceses for Environmental Action. This network has been set up by the dioceses of South-Western England – Truro, Exeter, Bath and Wells, Bristol, Gloucester and Salisbury. A non-Church partner is the Devon Renewable Energy Association. The aim of the network is to explore the scope for joint action and to establish collaborative projects that will cut the carbon footprint of the Church, raise awareness and lobby for change, open up potential for regional initiatives for ambitious investments (for example, renewable energy schemes on suitable church land) and sustainable procurement, and share leading practice. Members are convinced that dioceses can accomplish more in concert than they can acting individually, especially in relation to major investments and complex issues, such as renewable energy schemes and sustainable procurement.

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In London diocese, several churches have introduced renewable energy systems. Solar power is in use at St James's Piccadilly, St Mary's Spring Grove and St Aldhelm's Edmonton. St Stephen's Walbrook has a new energy-saving lighting system.

Planning permission and faculties (the Church's equivalent of listed building consent) are being sought for further projects. Permissions have been gained by St Silas Pentonville, in the course of their roof replacement project, for re-covering the south face of the roof with solar photovoltaic imitation slates, the first Church in the UK to gain permission for such a project.

A number of other churches – including St James's Piccadilly and St John's Wood Church – have a track- record of environmental auditing and mitigation, the former going back to an auditing scheme in London and Southwark during the 1990s.

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In Southwark, St Alban's Church, Streatham is using 18 solar panels to help power its buildings. This was a multi-partner project funded by EDF Energy's Green Fund and the Government's Low Carbon Building programme, with support from the consultancy Creative Environmental Networks. It followed a full energy audit of the church.

St Alban's was the second church in the Diocese to go for solar power, following the pioneering work of St Peter's, Brockley, in 2006.

St Mary's Church, Addington is an award-winning „eco-church“ that has developed numerous environmental projects, and is acting as a hub via its local Churches Together ecumenical network, to encourage other churches to carry out environmental audits and become more active in environmental work.

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Property, financial and professional partners will be sought in support of energy-saving and renewable energy installations – known as „retrofitting“ – and other associated adaptations, developments and reordering to churches.

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- Discussions and partnership will be sought during 2010 in assessing scope for use of other church-owned land where suitable and acceptable for renewable energy schemes, and community food-growing projects.
- By 2012, the Church should study the scope for establishing a „Community Energy Fund“ for mitigation. This would support local community partnerships for renewable energy, energy efficiency and conservation (for example insulation projects for low-income households) and other mitigation measures in England. It would receive funds from property developers who need to offset emissions from

new developments, as they aim to meet the tighter standards for carbon reduction from buildings. This scheme will learn from the pioneering scheme of Milton Keynes Council.

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Shrinking the Footprint (StF), the Church's main programme of action on environment and climate change in relation to the whole of its buildings and estate, was established after the „Sharing God's Planet“ report in 2005, and began work in 2006.

The scale of the task may be appreciated from the figures already gathered by StF as of 2007:-

- 16,200 churches
- national carbon footprint for cathedrals, churches, houses and offices, 330,000 tonnes CO<sub>2</sub>

churches and halls account for about 65% of emissions = 212,000 tonnes approx. The next largest segment of energy use and carbon footprint is clergy houses.

Including schools, the total is 1.1m tonnes.

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StF focused to begin with on reducing carbon dioxide emissions from Church buildings and operations. It has set itself the goal of reducing the Church's overall carbon footprint by 80% by 2050.

Initially, the target was set for a 60% reduction by 2050, in line with national policy. After debate in Parliament the national target was increased to 80% on the advice of the national Committee on Climate Change. It was accepted that the Church should follow suit, resulting in „the 20% Church“ in terms of its carbon footprint.

The „Shrinking the Footprint Path“ is set out on the comprehensive website set up for the programme and campaign (<http://www.shrinkingthefootprint.org>).

This provides the basis for action, emphasising the need for simple action first, to assess energy use then identify ways to reduce consumption and employ resources more efficiently.

The first step is to avoid waste of heat and power, then to seek efficiencies and economies in fuel use – electricity, gas or oil – after that to switch to green energy suppliers, then to investigate the scope for using renewable energy on site. Finally, residual emissions should be offset, via projects for climate change mitigation and adaptation overseas and at home.

To enable churches to move along this StF Path from energy assessment and savings to more ambitious projects and investments, the StF team commissioned a set of tools for guidance on energy management for churches, cathedrals, schools and clergy houses.

- churches and halls account for about 65% of emissions = 212,000 tonnes approx.

The next largest segment of energy use and carbon footprint is clergy houses. 3. In addition, in 2008 the Church Commissioners put on record their aim to reduce carbon dioxide emissions from bishops' houses and offices (by 60% by 2050 – in line with the Government's then energy White Paper). The opportunity is taken to review each property during a vacancy when there is a change of bishop; following which upgrades of boilers, insulation and glazing for energy-saving and improved efficiency and affordability are carried out – 25% of the whole stock having so far been improved in this way. Including schools, the total is 1.1m tonnes. Also the Commissioners had, by 2007, already increased from seven to 18 the number of fuel-efficient hybrid-power cars provided to bishops; and have since established a new ethical investment policy with a strong environmental dimension.

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Annual cuts in energy use and carbon emissions need to be „front loaded“ – reductions in the short term need to be greater than would be needed in later years to meet present long-term targets. This is for several reasons:

- Although there has been a small fall in emissions worldwide during the recession, the medium-term trend which is expected to resume – if it has not done so already – is a continued accelerating rise in emissions. But consensus agrees that emissions and atmospheric concentrations of greenhouse gases worldwide need to peak by not later than 2020 – at the very latest – then fall. Emissions today will take some years to work their way into rising or falling atmospheric concentrations, which in turn take decades more to effect a change (for worse or better) in the climate. Therefore our aims cannot be achieved if anyone waits for years and decades before making reductions. We need to begin at the sharpest rate possible, immediately.

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- To support developing efforts of the National Church, dioceses and parishes, the „toolkit“ provided by „Shrinking the Footprint“ should be refined and extended to further increase its versatility – to encourage more energy-saving and efficiency locally; to enable assessments of scope for retrofitting renewable energy systems in churches, cathedrals, schools and clergy housing; to disseminate good practice in a form which can be easily accessed and adopted across the Church.

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Durham and Newcastle Diocese

These neighbouring dioceses provide a striking and promising example of joint working to reduce emissions and improve energy efficiency – and boost quality of life for tenants – in clergy housing and other buildings.

A Joint Houses Environment Group was formed, to audit the carbon footprint of clergy houses and identify opportunities for energy saving. The group consisted of:

- the property managers and Environment Officers from both dioceses;
- an archdeacon; • a representative of the Energy Saving Trust.

An environment policy was then developed that related specifically to clergy

housing. One of the priorities in the environment policy was to carry out an energy efficiency audit of all the clergy houses in both dioceses. The information obtained would enable the property managers to develop a strategic programme of improvement, rather than respond to individual requests on an ad hoc basis.

Projects have been carried out to audit the carbon footprint of clergy houses and identify opportunities for energy saving. So far, the insulation measures undertaken have produced savings of some 14% in carbon emissions as well as giving financial savings and better quality of life in the houses to tenants.

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#### 1. Buildings and assets

##### Done or commenced

- Base dates for measuring and monitoring energy and emissions have been set nationally and in some dioceses. The national target of 80% reduction by 2050 has been widely adopted. Some dioceses have interim targets.
- Many church buildings, clergy houses and several diocesan offices have been audited and a number upgraded to save energy. A national toolkit is available online. Generic approaches for churches are being systematically developed in London, and for houses in Newcastle and Durham. The scope for renewable energy and retrofitting is being investigated.

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##### New challenges

- Churches and their buildings not yet audited should be professionally measured for their performance in energy use, emissions, water and waste disposal either individually or generically, and reports issued on management efficiencies and low cost improvements, by 2012.

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##### Newcastle Diocese

The major activity of the Diocese so far has been development of joint work with Durham (see previous page) to improve energy efficiency of clergy housing and reduce carbon footprints of church properties.

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Diocesan Environmental Officer Rob Kelsey has also been working with the Energy Saving Trust on a project called „Treading Lighter During Lent“. Based on the idea that Lent is a time for learning new habits of holy living, it has encouraged both clergy and parishioners to measure their carbon emissions on a weekly basis, and to use the season of Lent as an opportunity to shrink their carbon footprint.

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### 3. Durham

In addition to its energy efficiency and church housing collaboration with Newcastle (see left), Durham Diocese is active on several fronts:

- work by the Diocese's Environmental Task Group to make care for creation an integral part of worship and witness, and to encourage more sustainable lifestyles in use of energy reduction of waste;
- development of an energy policy for Durham Cathedral, and plans for a comprehensive environmental policy for the Diocese;

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Towards greener parish churches A host of churches have engaged in environmental projects, including renewable energy systems. The following is a tiny selection:

.....• In Lichfield Diocese the Church of St Alkmund's in Shrewsbury has installed solar panels on the roof, with a smart display system to show how much energy is being produced and what carbon emission savings are being made.....

Solar panels have also been installed and are in operation, on the lead roof of Grade 1 listed St Denys's Church in Sleaford, Lincoln Diocese. The panels are fixed to a frame with special non-intrusive clamps. This project is not about saving on electricity bills – that is merely a beneficial side effect. The main aim is to witness to a theological perspective on creation and the sustainable use of natural resources. This Church also recently appeared on „Songs of Praise“ on BBC 1.

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Exeter Diocese:

The Diocese has a team to oversee and promote Shrinking the Footprint, with the initial focus on the 1600 churches and other buildings. There is an energy efficiency programme, set up in collaboration with local authorities, for insulation of parsonages. In mid-2009 some 30 energy saving feasibility studies and other projects were underway, including an energy audit of the Cathedral, the Old Deanery and four church halls.

- It is planned to purchase all electricity from renewable energy suppliers and to offer deals to church schools and other community partners. A motion on this subject seeking government collaboration is also being promoted to other diocesan synods.

### ***Church of South India***

\* Increase government support for environmental protection and energy conservation programs: Churches are recommended to keep track of how your governmental leaders react or respond on environmental issues. Make your congregation aware of the statements and actions through a regular column in your church newsletter. Ask people to consider this information when voting.

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### 3.TAP THE SUN

Solar power plants are truly going mega, both in size and output. Plants that can generate over 150 MW of power are coming up in several countries. Though it does require heavier capital investment, solar power plants are increasingly becoming viable with the rise in oil prices. India should collaborate with major countries to build numerous such plants across the country.

### 4. Wind Energy

In terms of renewable energy, few can beat the wind, except of course, the sun. Wind power has been growing in India which now stands at around 8,000 MW, making the country the fourth largest producer in the world.

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Respect the environment in the gifts you select. Look for ways of saving energy (and money) in your home. When purchasing appliances, look for low-energy, high-efficiency models. Conduct a thorough audit of the energy use in your church buildings and programs. Look for ways that energy can be saved. Turn off lights, fans, and air conditioners when not in use.

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5 Green Equipment: We will promote the use of energy efficient instruments as far as possible.

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Green Church believes that over-consumption in the North can have a debilitating impact on countries of the South. Consumption of non-renewable resources in the North should be significantly reduced, by increasing recycling and reuse of materials, and by encouraging transition to less material-intensive technologies.

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\* Environmental tithing: We challenge ourselves, particularly those of us who are economically secure, to tithe environmentally. Tithers would reduce their burden on the earth's bounty by producing 10 percent less in waste, consuming 10 percent less in non-renewable resources, and contributing the financial savings we have made to Earthcare efforts. Environmental tithing also entails giving time to learn about environmental problems and to work with others toward solutions.

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7.Green Home Audits: We will promote a green audit in our homes. The Synod ecological committee is requesting all the Dioceses , Congregations and Institutions to undergo Green Auditing, and has made a sample questionnaire available. "We have to assess how ecologically sound we are."

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2. Green lighting: We will promote the use of compact fluorescent lamps (CFLs) which use one-third of the power of conventional bulbs. The Indian government has

launched a massive programme to popularise CFLs by launching schemes to encourage consumers to buy them. It can lead to reduction of 10,000 MW of electricity.

### ***Presbyterian Church Ghana***

1. To encourage the adaptation of energy conservation practices in heating to 60% of women and households through the use of locally produced energy-efficient stoves.

### ***Jesuits***

#### Lifestyles

We will carry out energy audits and Environmental Impact Statements (EIS) to assess the ecological footprint of our community, our work and our province. This will lead to our adopting ways of conserving resources and of introducing renewable energy practices. We will first comply with local mandated civil sustainability practices and then go beyond them in a voluntary way.

Air travel makes a significant contribution to global climate change; we will factor this into our planning and promote alternative ways of communication.

Our social centres and NGOs will be the first to commit publicly to recycle all their paper, reduce their carbon footprint, derive 35% of their energy from renewable resources, offset their air travel by planting trees and replace their fleet of cars with energy-efficient ones, within a given timeframe.

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In India, Jesuits train the local population in rural areas to produce energy-efficient equipment such as solar thermal equipment<sup>6</sup>.

Sankt Georgen Graduate School of Philosophy and Theology in Frankfurt, Germany, consists of a seminary, a university and a community house for Jesuits. Much has been done in recent years to address energy use, water consumption and CO<sub>2</sub> emissions:

An efficient water management to separate drinking water from water for toilets and laundry has been introduced

A combined heat and power unit has been installed. Geothermal energy is now used throughout the campus. Solar plants are employed in the seminary building. A car running off natural gas has been bought and is in use. All rooms in the Jesuit



community house are currently being refurbished to minimize CO2 emissions. This refurbishment will be completed in October 2010.

### ***New Psalmist Baptist Church***

Development of options to make our new, 41 million dollar edifice more energy efficient, including review of lighting, heating, materials and energy efficiency strategies.

Conduct of energy audits in the homes of individual parishioners in conjunction with the local energy supplier in Maryland

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The church staff is expanding its recycling efforts, and looking at identifying various ways to reduce its carbon footprint and energy consumption.

### ***Polish Orthodox Church***

3. Practical ecological actions at educational institutions:

- a) Continuation and introduction of stricter waste selection as well as water and energy conservation policy at the Orthodox Theological Seminary in Warsaw;
- b) Introduction of stricter energy conservation at Suprasl Academy and Holy Annunciation Monastery through installation of geothermal heating systems in 2010-11;
- c) Strict waste selection at Suprasl Academy as practical educational example for all participants of Suprasl Academy programme;
- d) Introduction of stricter water conservation policy and energy conservation at other Orthodox monastic communities in Poland;
- e) Information on possibilities of installation of geothermal and solar heating systems at monastic and parish facilities.

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the faithful will be encouraged to carry out environmental audits of their households and to undertake appropriate practical action (for example use of environmentally friendly detergents, reducing water consumption by installing “stoppers” in toilet cisterns, going for shopping with a carrier bag, etc.). The booklets may be supplied to every Orthodox family during traditional pastoral home visits after Epiphany Feast.

### ***Quakers***

Assets

□ The historic Quaker owned conference centre, Swarthmoor Hall, in Cumbria plans to come ‘off grid’ in the next two to three years through on-site, small-scale

energy production. Swarthmoor Hall is also seriously investigating the possibility of using the surrounding farmland it owns for one or two commercial wind turbines, to be owned co-operatively by British Quakers.

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Friends House has recently completed a comprehensive environmental audit. An ambitious plan of change has been produced; including a commitment to 10:10 and at least a 20 per cent reduction in carbon emissions by 2013.

### ***Lutheran Church of Tanzania***

Specific Objectives for the project are as follows:

- To introduce and popularize economic charcoal cookers and alternative sources of cooking energy to gradually take the place of charcoal
- To advocate for availability of electricity, LPG and natural gas for domestic use, at popular prices.
- To popularize non-wood based construction material
- To introduce and popularize non-wood alternatives in the firing of clay-brick kilns. [coffee and rice husks, also saw dust.
- To introduce and popularize burials which neither use wooden coffins, nor graves constructed by cement bricks and mortar.
- To introduce and popularize forest honey harvesting techniques to replace fire.
- To popularize use of compost and livestock manure in place of chemical fertilizer which in the long term kills the soil.
- To advocate for orderly excavation of clay for brick making, and mining of granite for construction.

### **Daoist**

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Temples with restaurants and lodging places should manage these places in ways that are kind to the environment, saving water and energy, and reducing the use of disposable tableware.

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. “Environmentally friendly” and “energy saving” should be the standards for Daoist temples’ energy choices. Temples should also establish structures that will help to reprocess and recycle used items and waste. Temples capable of doing so should set up sewage cleaning systems. From 2011 onwards we will promote these experiences.

## Hindu

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The Hindu community has purchasing power. We want to develop a set of standards based on the principle of ahimsa (non-violence) that will assist the community in ethical buying in line with its ethos and values. We propose a 'Hindu benchmark' for a range of products and services including renewable energy, ethically sourced food, transport, and other products and services that assist sustainable lifestyles.

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as the Hindu diaspora increases, so too does its number of places of worship. it is important, therefore, that these buildings are constructed and maintained in an environmentally-friendly manner.

To achieve this, an Energy Efficiency Pack will be created. Researched and developed by a core group, the Pack will help temples of all sizes to reduce their carbon footprint. The Pack will give information ranging from the importance of and financial incentives for energy efficient light bulbs to recommended suppliers of solar panels.

## Interfaith

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### ***Operation Noah***

We look to church leaders to lead a movement towards Low Carbon Christian Living. An example of an initial practical, but also symbolic, expression of leaders' commitment would be for them to move out of large, draughty houses, including old vicarages, to modern, energy efficient homes.

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There are deeply rooted social justice elements in caring for each other and for creation. In implementing Low Carbon Christian Living Operation Noah would actively support initiatives to help those on low incomes, such as car pooling, community gardening, support for retrofitting homes, and energy sourcing through renewables.

### ***Interfaith Power and Light***

#### A. IPL Mission Statement

The mission of the Interfaith Power and Light campaign is to be faithful stewards of creation by responding to global warming through the promotion of energy conservation, energy efficiency, and renewable energy. This campaign intends to protect the earth's ecosystems, safeguard the health of all creation, and ensure

sufficient, sustainable energy for all.

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### C. Public Policy

Goal: To ensure that the voice of the religious community is heard in policy -making and to leverage our grassroots base to support clean energy policies

Background: Over the last three years we have focused on educating our grassroots network about climate change and renewable energy, with minimal effort dedicated to communicating with legislators directly. 4 For the next five years, we will continue to educate our grassroots network about a sustainable energy platform and create strong advocates for clean energy policy. We will assign a higher priority to communicating directly with legislators about policy decisions that are consistent with our mission, as we recognize the opportunity in the next 12-24 months for meaningful legislation to be passed. We will rigorously adhere to our lobbying limitations and not devote more than 20% of our total expenditures to those efforts defined as lobbying.

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## VII. Addendum – Organizational History

The Regeneration Project (TRP) was founded in 1993 by the Rev. Sally Bingham and the Rev. Ben Webb to support efforts to link environmental concerns to religion. In 1997, Rev. Bingham joined with Steve MacAusland, an active Episcopal church lay leader in Massachusetts, to create Episcopal Power and Light (EPL). This first TRP project was intended to promote and support clean energy by signing up Episcopal churches in California and Massachusetts for green energy. Over 60 churches were signed up by 2000, when an “energy crisis” hit California in the wake of utility deregulation. Due to the resulting electricity price spikes, green energy providers were no longer able to operate in the state, and all of EPL’s congregations were switched back to “brown power.”

In 2000, EPL joined forces with The California Council of Churches, the Southern California Ecumenical Council, and the Northern California Inter-religious Conference to form California Interfaith Power and Light (CIPL). Along with an interfaith mission and a broader purpose – to mobilize a religious response to global warming – CIPL developed a menu of actions for congregations to take, beginning with energy conservation. However, CIPL recognized that congregational action alone would not be able to stem the tide of global warming, and included a public policy focus in its actions. Members were asked to communicate with elected officials and advocate for clean energy solutions.

By 2001, CIPL had signed up over 100 congregations as members, helping them to reduce energy consumption and advocate for state level policies to conserve energy and ramp up renewable energy. Soon, Massachusetts EPL had followed suit and reformed as Massachusetts Interfaith Power and Light, and TRP was spending much of its time helping additional states adopt the IPL model. TRP created its first strategic

plan, “Moving Forward,” in 2003, which outlined the shared mission and goals of the IPL movement, and mapped out a target of 20 affiliated state IPL programs by 2007.

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Continue to carry out our work in coalition with strategic partners, recognizing that solving global warming will take all members of society

Commentary: With its unique role as a national interfaith organization focused on global warming and energy issues, IPL is a natural coalition builder. With a foot in both worlds – religious and environmental – we are an important bridge between these two constituencies. In order to maximize our impact, we will continue to build strategic alliances with secular and religious partners, from the Sierra Club to the National Association of Evangelicals.

### ***GreenFaith US***

Goal 1: Develop a series of sustainable consumption resources for faith-based groups.

GreenFaith will develop a series of resources to enable members of religious communities to learn a religious basis for various aspects or areas of sustainable consumption, to learn practical strategies for implementing sustainable consumption habits, and to read success stories featuring people from diverse religious backgrounds. We have already begun to create such a resource on sustainable food habits, and we will initiate research soon on solar energy.

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Goal 2: Develop energy conservation training program for houses of worship.

GreenFaith has developed expertise in conducting energy audits for US houses of worship, having conducted over 70 of these audits in the past four years. We have gained an understanding of the best practices in this area, and the ways in which they differ from the energy auditing model that most utilities and energy services companies use.

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## Jewish

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As a sovereign nation, Israel makes decisions that have far-reaching ecological consequences. Israel has been described as the “National Jewish People Project.” It is a locus of pride, concern and identity for Jews around the world. As a small country rich in sunlight, it could rapidly become a world leader and flagship in solar energy portfolio standards and in building solar powered auto fleet. Turning Israel into the first nation predominantly powered by renewable energy should be a leading goal for the Jewish people world wide. Although we recognize that the motives and mechanisms driving environmental activism in Israel are different from those at work in the Diaspora, a commitment to the unity of Jewish people hood leads us to make Israel an integral part of this plan.

Accordingly, we call for Israeli government policies that will advance sustainability. These are largely based on the recommendations of the “Paths to Sustainability” research group of the “Life and Environment” coalition of Israeli environmental organizations. In addition, we set out ways in which Jews outside Israel can support the Israeli environmental movement and also the country’s dynamic clean technology sector.

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### Policy and Advocacy

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#### Vision for the Next Generation: Jewish Environmental Policy and Advocacy

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- The Israeli environmental community together with Diaspora Jewish education campaigns for binding carbon limiting legislation that will cut Israel’s emissions 20% by 2020 and 90% by 2048.
- Israel’s environmental organizations and clean energy companies combine to lobby the government for a significant feed-in tariff for renewable **energy**, and substantial investment in Israel’s world-leading clean-**energy** technologies and companies.
- There is a significant Jewish environmental voice on Capitol Hill lobbying for climate change legislation.

\* \* \*

#### • Climate Legislation in the State of Israel

The State of Israel should adopt ambitious **energy** and environmental policies that place it at the forefront of the global campaign to avert climate change.

The State of Israel, the world’s only Jewish state is starting to join the world effort to combat climate change. It needs to act, not just as a demographically Jewish country but as one that bears responsibility for implementing a well-established Jewish ethic for environmental stewardship. This is an issue that needs to be addressed by Rabbinical leaders in Israel as well as by the national government.

#### • Clean **Energy** Policy in Israel

Israel’s environmental organizations and clean **energy** companies should combine to lobby the government for a significant feed-in tariff for renewable **energy**, and substantial investment in Israel’s world-leading clean-**energy** technologies and companies. US Jewish organizations should support the Israeli ecology movement in lobbying. Some proportion of US government aid should be funneled into sustainable power projects including cross-border peace-building initiatives.

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- **By 2010, all Jewish institutions should establish an in-house Green Team responsible for recommending and implementing measures to make the running of the organization more environmentally sustainable.**
- **Jewish buildings improve energy efficiency, buy renewable energy wherever possible, and offset the remaining footprint.**
- **Jewish organizations reduce energy consumption next year by 10% by and the following year by a further 10% by taking efficiency measures and educating staff about energy saving.**
- **Investment and banking decisions will be made with environmental criteria; by the end of next year 5% of money invested by Jewish institutions will use environmental criteria without sacrificing returns.**
- **By 2015 US Jewish foundations will aim to invest 18% of their endowments in Israeli clean energy companies, simultaneously fulfilling Jewish, Zionist, environmental and business goals.**
- **The Jewish community runs training seminars for charitable foundation boards, endowment committees, and professionals to promote environmentally responsible investment decisions.**

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This rabbinic training program component should equip rabbis to teach, lead and inspire their communities towards making sustainability central to their mission. It should include in depth study of classical Jewish source that bear on ecology, as well as basic environmental science and policy. Rabbis should be strongly encouraged to engage with and formulate theological and legal positions on environmental issues including environmental justice, e.g. by presenting them with halakhic and public policy questions on issues such as energy efficiency, switching to renewable energy sources and water consumption.

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We call on the Jewish Community to adopt these goals:

... - That Israel will be a renewable light unto the nations powered lowered by clean energy sources, and Jerusalem will become a model green city.

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Organizations should, as a matter of course, offset the carbon emissions produced by their activities, e.g. through projects such as the Heschel Center's Good Energy Initiative.

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Electricity accounts for the vast majority of Israel's greenhouse gas emissions; reduction efforts should focus in this sector. Because of its total reliance on fossil fuels, 63% of Israel's greenhouse gas emissions come from its electric power plants – three quarters of which burn coal – the most GHG intensive fuel in use today. In light of this the main components of climate change policy in Israel need to be:

- **Energy conservation measures** that can lead to immediate reductions in electricity and petrol consumption.
- **Dramatic changes in the sources of electrical power in the country.** Israel needs a **no new coal power stations policy**. Ambitious objectives for Israel are realistic. Denmark already takes 25% of its **energy** from renewable sources (largely wind) and anticipates 50% levels by 2025. Given its optimal location for solar power generation, Israel should declare an objective of generating 30% of its **energy** from renewables by 2020, and **energy** independence by 2050.

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As a Jewish country that is home to cutting-edge building and energy technologies, Israel has the potential to develop world-leading green cities that can set a global standard for sustainability. Furthermore, Jewish tradition contains profound wisdom about urban planning that can inform this process. For example the biblical requirement (Numbers 35: 1-5) that cities be surrounded by green belts (which inspired the garden suburb movement in the 1920's.)

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With the support of programs like the Jewish Greening Fellowship, Jewish agencies are taking the lead in modeling meaningful Jewish responses to global climate change. Twenty JCCs and camps in the New York region are undergoing energy audits of their facilities, instituting green teams, implementing energy efficiency upgrades, greening their operations and providing innovative programs for their constituents to teach them what they can do to make a difference.

The city of Jerusalem, under the leadership of Mayor Nir Barkat and Deputy Mayor Naomi Tsur, has placed greening the city at the top of its list of priorities. There are plans for developing five new urban parks, an extensive light railway system (under construction), major development of green roofs, a proliferation of urban gardens, and integration of environmental concerns into the education system at all levels.

Arad, a city in the Negev desert also presents an immense opportunity. Arad is the future home to Israel's largest solar energy park offering the potential to supply a portion of clean energy needed to power a medium to large scale eco-city. It is the second largest municipal landsite in Israel, most of which is undeveloped. With incentives in the form of government subsidies for developing the Negev, some of the cleanest air in the world it has become a focus for plans to build a model eco-city with planning, energy, water and transport systems that can serve as a template for building sustainable cities in a variety of different environments and climates worldwide.



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Canfei Nesharim provides Torah-based activities, program resources, and divrei Torah which relate environmental themes to seven different times of the Jewish year: Sukkot and water, Chanukah and energy, Tu b'Shevat and the environment, Purim, Passover, Counting the Omer, and the Three Weeks.

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Energy conservation by definition requires public involvement. Relying on the old adage from the Mishna: "You don't have to complete the task, but neither are you free to avoid it" – educational programs and media campaigns should target all ages. Israel's public has already shown that it is able and willing to answer the call to save scarce resources. A 2008 national advertising campaign to save water after four consecutive drought years led to marked reduction in household consumption. Israelis willingly respond to urgent requests to donate blood, participate in bone marrow data bases and serve in a variety of security contexts. Yet, they have never been seriously asked to consider their behavior with regards to electricity consumption. Besides saving individual consumer's money, there is a compelling geopolitical context for energy conservation in Israel. A major national media campaign should appeal to Israelis' proven environmental commitment and economic prudence.

The measures that need to be promoted are no different than the voluntary actions expected of people enjoying Western lifestyles everywhere. Shifting to compact fluorescent lights and turning them and appliances off when not in use, using ceiling fans in lieu of air conditioners, wearing sweaters in winters – the menu goes on and on. It is well known and intuitively appealing. Yet, public policies should provide sticks and carrots to ensure that conservation efforts are effective. While Israel has enacted legally binding criterion for insulation in construction, compliance is notoriously inadequate. A voluntary green building standard should be toughened and made mandatory for all new buildings. Existing homes need be redesigned, with small grants and tax credits provided to expedite the transition. Energy efficiency standards need to be adopted and enforced for all household appliances with awards granted to public institutions and municipalities who show particularly conspicuous success. Municipalities and other public institutions should be required to submit detailed plans of progress.

At the same time Israel has to aggressively promote a new policy of clean energy production. This should begin with a moratorium on new coal-fired plants, including the Ashkelon facility. If conventional power plants are required during an interim stage, new natural gas reserves, recently discovered off Israel's Mediterranean coasts offer a strong economic justification for non-coal power plants.

While presently subsidies exist for electricity supplied individual use of photovoltaic roofs, these are designed to support small, individual generators only. In fact, Israel's land resources are minimal and its solar strategy must take into account the need for

concentrated solar technologies which will allow maximum electricity production with minimal use of lands. Agricultural lands, no longer under cultivation should be rezoned with minimum bureaucratic burden.

Ambitious objectives for Israel are realistic. Denmark already takes 25% of its energy from renewable sources (largely wind) and anticipates 50% levels by 2025. Given its optimal location for solar power generation, Israel should declare an objective of energy independence by 2050. While the sun will provide most of the power in large Negev facilities, the feasibility of offshore Mediterranean windfarms to supplement major power plants should be reviewed closely.

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Israel's Central Bureau of Statistics reported in 2006 that the country emits 73.5 million tons of CO2 equivalent per year. In international rankings, Israel has the 28th highest per capita green house gas emission levels in the world. Rather than taking proactive initiatives – or at the very least “no-regrets” energy conservation initiatives, over the 17 years since the treaty was signed, Israel has extended its dependence on fossil fuels, with electricity consumption increasing by 6% a year.

## **Muslim**

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Promote compact development and transit/pedestrian development and other “smart growth” measures to encourage local communities to consider the energy impacts of development and infrastructure construction.

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Examine opportunities in freight transportation that would improve the energy efficiency of the movement of goods across the regions.

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Promote the shift to higher efficiency vehicles, lower carbon fuels and advanced technologies through the use of incentives and education.

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Encourage shifts to lower-carbon fuels and advanced vehicle technologies for all transit services.

## EcoSikh

Individuals/families:

Learn about the energy efficiency of your home and commit to reducing your energy consumption by 10 per cent each year

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Gurdwaras / Organizations:

Hold seminars on composting, gardening, and energy efficiency

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	Assets	Education	Celebration
Individual / family	<p>Participate in local recycling programs</p> <p>Participate in local co-op gardening programs</p> <p>Buy locally grown and organic foods</p> <p>Plant herb gardens for home cooking</p>	<p>Learn about food choices and their impact in the world</p> <p>Learn about the impact of transportation choices</p> <p>Learn about the energy efficiency of our homes and how we can save energy</p> <p>Learn how to reduce energy consumption by 10% each year</p>	<p>Plant an ecoSikh garden or tree</p> <p>Visit your local parks monthly as time for spiritual reflection and renewal</p>
Gurdwara / organization	<p>Invest in solar panels for gurdwaras</p> <p>Start rainwater harvesting programs</p> <p>Invest in copper storage pots to sterilize water</p> <p>Consult green architects to improve eco-friendliness of gurdwaras</p> <p>Purchase reusable plates and cups or materials made out of</p>	<p>Hold seminars on home composting, gardening, and energy efficiency</p> <p>Create a space to post weekly ecotips at the gurdwara</p> <p>Learn about and support eco-initiatives at other gurdwaras through eco-twinning programs</p> <p>Incorporate classes that celebrate Sikh eco-theology</p>	<p>Have the ragis sing more shabads with environmental themes</p> <p>Distribute tree saplings</p> <p>Participate in EcoSikh holidays</p>

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- Invest in copper storage pots to kill enteric bacteria in water: see Appendix A
- Consult green architects to improve eco-friendliness of gurdwaras

- Invest in solar panels for gurdwaras: Although solar panels may be an expensive upfront cost, the energy saved over time makes it a wise economic decision. You can learn more about solar thermal energy, solar water pumping, and incentives and schemes run by the Indian government through these sites:  
<http://www.ireda.in>  
<http://mnes.nic.in>
- Purchase reusable plates and cups or materials made out of recycled and compostable material for langar
- Print all materials on recycled paper

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- Help your local community petition for green transportation alternatives: this can be anything from providing tax breaks for fuel efficient cars, supporting public transportation and bicycle sharing, and lobbying for the creation of bike lanes in your city