



KHUTBAH NOTES

**a basic outline
for
IMAMS**

Sustainable Energy in Islam

SUSTAINABLE ENERGY IN ISLAM

Like everything else, energy part of Allah's creation. The Qur'an encourages people to look intensely at Allah's creation and learn how to use it properly. The sun is the most potent source of energy, heat and light, for the earth:

Did We not build seven strong [heavens] above you, and make a blazing lamp?

(Qur'an 78:12)

In the age of space travel, solar cells, first used to power spacecraft outside earth's atmosphere, have been invented and are being developed and recently mass produced to use the sun's light and heat on earth to make clean electricity, light and hot water for our homes and appliances.

Water too, as it pours along its channels in the earth, not only irrigates crops, by various mechanisms, including waterwheels, and provides water to drink, but is forceful enough to turn wheels that power machinery such as mills:

Did We not send water pouring down from the clouds to bring forth with it grain, plants, and luxuriant gardens?

(78: 16)

Have you not considered that God sends water down from the sky, guides it along to form springs in the earth, and then, with it, brings forth vegetation of various colours, which later withers, turns yellow before your eyes, and is crumbled to dust at His command? There is truly a reminder in this for those who have understanding.

29:21

Wind likewise is often forceful enough to turn machinery, to power a sailing boat or a kite, or help a bird (or a plane) to fly:

in the changing of the winds and clouds that run their appointed courses between the sky and earth: there are signs in all these for those who use their minds.

(2:164)

The first windmills were those originating in Iran/Persia which turned horizontally on a vertical axis, like a modern tower fan, but powered by wind channeled in from one direction. As the idea spread and developed with the Islamic civilization into vertical motion wind capture on a horizontal axis, common to most of the windmills in Europe, every village would have its mill, whether powered by water or wind, and this would be used for numerous processes, from grinding corn or other things like yellow pigment for paint, to making paper and steel. Early factories in the industrial revolution were still known as mills. Cotton and wool were cleaned, processed and woven in mills. Modern mills and presses are driven by electricity, (in Morocco they use larger-scale hydro-electricity from mountain rivers) or by engines using diesel or other oil products. Both wind and water can now be used to generate electricity on a large scale and the technology to do this and to store the energy generated is still developing.

In the ancient world, fire was the most common manifestation of pure energy, spontaneously kindling in hot vegetation:

... الَّذِي جَعَلَ لَكُم مِّنَ الشَّجَرِ الْأَخْضَرِ نَارًا فَإِذَا أَنْتُمْ مِّنْهُ تُوقِدُونَ (٨٠)

[It is He] who produces fire for you out of the green tree—lo and behold!—from it you kindle.

(36:80)

Has the story of Moses come to you [Prophet]? He saw a fire and said to his people, 'Stay here—I can see a fire. Maybe I can bring you a flaming brand from it or find some guidance there.'

(20: 9-10)

Fire was then used by human beings, as now, for cooking, light and warmth.

The Prophet's wife Aishah (RA) said, 'A complete month would pass by during which we would not make a fire (for cooking), and our food used to be only dates and water unless we were given a present of some meat.'

(Hadith: Muslim)

Charcoal fires were used at some mills in the Muslim Civilization to make and mould steel - Damascus was famous for its layered steel - and this technology was superseded by coal only after the wood to make the charcoal was being

used up too fast in the mass production of iron and steel. Coal fuelled the industrial revolution, to mass-produce steel and pottery, heat water to power steam engines, heat homes and to generate electricity. Oil and gas followed, each burning with less harmful and polluting fumes than the last, but all these are fossil fuels from the earth which ultimately must run out. Oil and gas companies are struggling by ever more expensive and desperate means to extract these commodities from the earth, so that the price of energy is rocketing. Meanwhile all these still produce gases like Carbon Dioxide and Methane that heat up the earth's atmosphere and change its weather / climate patterns, causing huge areas of ice to melt. This in turn is destabilizing the earth's crust¹ and raising the level of its oceans, as it has done in the distant geological past.

Another source of energy mentioned in the Qur'an is volcanic activity and its associated earthquakes. Warnings of the Last Day sometimes depict mountains becoming 'like carded wool' وَتَكُونُ الْجِبَالُ كَالْعِهْنِ الْمَنْفُوشِ (101:4), a good description of the dust clouds emitted by an erupting volcano; earthquakes (*al-zilzila*) which can swallow people up (*Surat al-Mulk*) and destroy their towns suddenly (the people of Lut); and in the story of Nūh, the start of the flood was when 'the furnace boiled over' اَوْفَارَ التَّنُّورُ (11:40), with boiling underground water presumably erupting from volcanic layers below the earth's surface.

All these forms of energy, having been created by Allah, are under His control and He can make them useful to us (45:12) وَسَخَّرَ لَكُمْ مَّا فِي السَّمَوَاتِ (١٢) or can use them وَمَا فِي الْأَرْضِ جَمِيعًا مِّنْهُ ۚ إِنَّ فِي ذَٰلِكَ لَآيَاتٍ لِّقَوْمٍ يَتَفَكَّرُونَ bring about our destruction if He so wills.

¹ *Waking the Giant: How a changing climate triggers earthquakes, tsunamis, and volcanoes* by Bill McGuire

The descriptions of Jahannam in the Qur'an involve unquenchable fire, a bottomless pit (*hufra min al-nar*), darkness (*dhulm*), a sense of flames or crushing weight closing in, and foul-smelling, boiling fluids. These descriptions bring to mind the conditions associated with obtaining fossil fuels like coal, oil and gas that have provided us with most of our energy since the Industrial Revolution, fuelling power stations that produce electricity, while polluting and heating up the Earth's atmosphere. We may not see the fossil fuels that burn to make electricity in our power stations, but many of these are still coal or gas fired.

The Qur'an mentions that rocks are alive in their own way:

... your hearts became as hard as rocks, or even harder, for there are rocks from which streams spring out, and some from which water comes when they split open, and others which fall down in awe of God:

(2:74)

Scientists studying radioactive rocks like Radium and Uranium in the 20th century eventually managed to split atoms, to release and harness the immense energy holding together the nuclei, so that it too could provide large amounts of relatively cheap and clean electricity. The huge problems associated with Nuclear energy relate to the catastrophic accidents like Chernobyl and Fukushima, with long-lived radioactive pollution spreading far and wide, even from one side of the Pacific to the other. What to do with the radioactive waste and prevent it causing damage to genes in humans and other animals, or exploding as a weapon, is still a problem scientists and politicians are struggling to solve.

The more the scientists learn the more aware they become that energy is in everything, holding its particles together, particles so small that it is almost impossible to detect them. The question then arises: Is EVERYTHING around us composed of pure energy? ²

² Mass is just a super-concentrated form of energy and, moreover, these things can turn from one form to the other and back again. Nuclear power stations exploit this idea inside their reactors where subatomic particles, called neutrons, are fired at the nuclei of uranium atoms, which causes the uranium to split into smaller atoms. The process of fission releases energy and further neutrons that can go on to split more uranium atoms. If you made very precise measurements of all the particles before and after the process, you would find that the total mass of the latter was very slightly smaller than the former, a difference known as the "mass defect". That missing matter has

This brings us back to the Sun, whose energy is the result, scientist say, of nuclear fusion, whereby energy is released when atoms bind together.

The [Sun](#) is a [main-sequence star](#), and thus generates its [energy](#) by nuclear fusion of [hydrogen](#) nuclei into [helium](#). In its core, the Sun fuses 620 million [metric tons](#) of hydrogen each second.

http://en.wikipedia.org/wiki/Nuclear_fusion

Many companies and government agencies are pouring vast sums of money into researching the possibilities of producing energy on a smaller or larger scale using nuclear fusion. Inshallah one day they will overcome the many problems involved and nuclear fusion will become the energy of the future.

la yuḥītuna bi shay'in min 'ilmihi illa bi ma sha'

He knows what is before them and what is behind them, but they do not comprehend any of His knowledge except what He wills...

(2:255)

Meanwhile we have to learn to use the energy we have wisely, without excess, and to generate our domestic and industrial energy by renewable, clean and sustainable means that do not threaten the very existence of life on earth.

SAVING ENERGY AND MONEY

The first large-scale power stations of all kinds in the West date from late Victorian times, and most of them were built in the early or mid 20th century. Many need updating and are becoming incapable of generating enough electricity to supply the demand. This is an expensive process requiring hard decisions to be made on which type of energy to prioritize in new power stations. Meanwhile we can all do our bit to reduce our demands for energy and ensure that clean renewable energy is pushed up the list of priorities.

The Qur'an provides an ideal picture of a garden for the Good where:

been converted to energy and you can calculate how much using Einstein's equation.
<http://www.theguardian.com/science/2014/apr/05/einstein-equation-emc2-special-relativity-alok-jha>

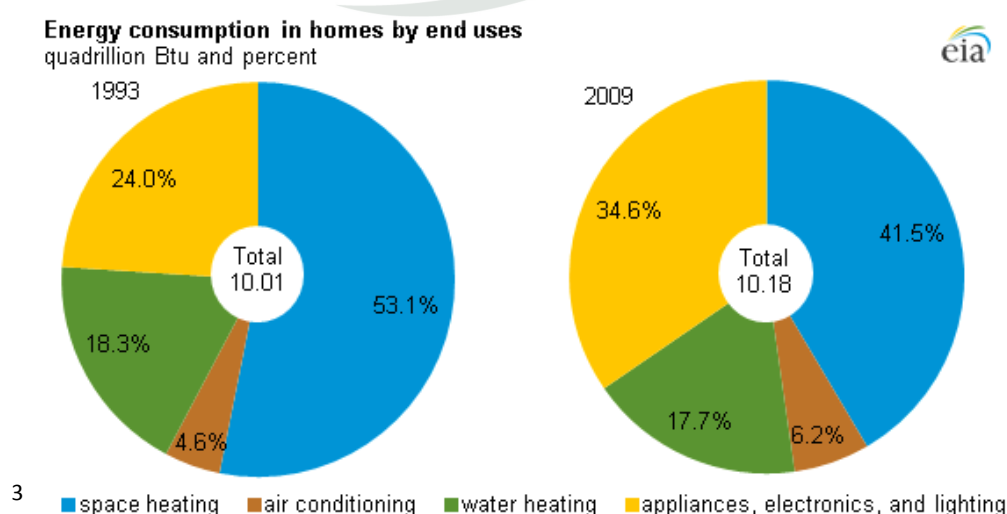
They will sit on couches, feeling neither scorching heat nor biting cold, with shady [branches] spread above them and clusters of fruit hanging close at hand.

(76:13-14)

Today with our air-conditioned buildings we try to achieve such even temperatures, indoors at least, in this world where scorching heat and/or biting cold have always been a hard reality for most people most of the time. Heating and cooling our buildings and water use up very large amounts of energy of all kinds.³ For places with enough sunshine to need air cooling, there are already solar powered air-conditioners available. Some technologies can recycle the heat extracted from one place and turn it into power for other purposes (Combined Heat and Power, and Heat Pumps). At home, we can save energy for space heating by wearing more clothes, doing more exercise, getting radiator thermostats and turning them down to keep the temperature moderate in each room, turning off lights, installing energy-saving bulbs and appliances, insulating our houses, stopping draughts - the list goes on and on.

One quick solution to is to switch to a 100% green electricity supply company that generates electricity by renewable means. Some of these are already also offering 'Green Gas' made from renewable biological sources.

In the Prophet Muhammad's house (S) fire was rarely kindled, as we saw in the hadith quoted earlier. Eating raw food like fruit, nuts and fresh vegetables is



not only better for us but saves a good deal of energy. Eating fresh local produce saves the energy needed to transport and process the food. Better still would be to grow our own food.

GROWING YOUR OWN FOOD

If we had to grow your own food, would we eat as much as we do? If we had to raise and slaughter our own animals, would we eat as much meat?

If everyone grew even a fraction of the food they eat, it would save a lot of money, water, energy, animal suffering and pollution being wasted on intensive agriculture, transport, processing, preserving etc. Nearly everyone can find a pot or a window-box, a grow-bag, a vegetable patch or allotment to cultivate.

Anas reported that the Prophet said, **"If a Muslim plants a tree or sows seeds, and then a bird, or a person or an animal eats from it, it is regarded as a charitable gift (*sadaqah*) for him."** (Bukhari)

At the very least growing our own food can teach us to respect nature and the slow rate of growth of most food crops, as well as the competition they face from other 'consumers', like slugs, fungi and insects, so that we appreciate the food we eat and don't waste it. If we have room to rear our own food animals and birds, we learn to respect them as individual creatures made by Allah, like ourselves. It is much harder to kill an animal you have been feeding and caring for regularly than to buy a lump of meat from a supermarket freezer.

COMMUNITY ACTION

Community Energy is a way of getting communities to exercise the force of their numbers to generate energy and make money-saving deals.

Whereas individual homeowners may find it too expensive to install renewable energy generation, a community may be able to club together to raise funds to install a larger generation scheme on or in a community building.

For example, Solar Schools www.solarschools.org.uk/ is a project of the 10:10 campaign, who provide help and guidance on their website. The schools hold events and sales to raise the necessary funds, as well as applying for grants and

government subsidies. Once installed, the solar PV panels start to generate money as well as electricity, and to reduce energy bills. There are other solar schools too like the one in West Oxford which has a video on the Centre for Sustainable Energy website www.cse.org.uk/projects/view/1178 together with other examples of communities generating energy using wind and water turbines. Some churches are going solar, like St James's in Piccadilly, London, and there is a Community Energy Coalition now where such communities can link up with others as well as several Community Energy networks in England, Scotland and Wales.

Community switching to greener and cheaper energy supply companies can use the weight of members' numbers to achieve bigger and better deals.

Communities can also encourage and help one another to install energy-saving measures in their homes, and provide micro-finance (shari'a-compliant) schemes to finance such improvements.

DU'A

Have you not considered how your Lord lengthens the shade? If He had willed, He could have made it stand still—We made the sun its indicator—but We gradually draw it towards Us, little by little. It is He who made the night a garment for you, and sleep a rest, and made the day like a resurrection. It is He who sends the winds as heralds of good news before His Mercy. We send down pure water from the sky, so that We can revive a dead land with it, and We give it as a drink to many animals and people We have created—many times We have repeated this to people so that they might take heed, but most persist in their ingratitude—had it been Our will, We would have sent a warner to every town—so do not give in to the disbelievers: strive hard against them with this Qur'an.

(Qur'an 25:45-52)

O Allah let us be among those who take heed of Your bounty and are thankful, using it within the limits you have given us. O Lord let us teach others, using the Qur'an, how to appreciate and respect Your creation.

Consider the fire you kindle—is it you who make the wood for it grow or We? We made it a reminder and useful to those who kindle it, so [Prophet] glorify the name of your Lord, the Supreme.

(Qur'an 56:73)

O Allah, all things in this earth, including energy, are part of Your bounty. Help us to use them carefully, wisely and for good purposes.

It is God who created the heavens and earth, who has sent down water from the sky and with it brought forth produce to nourish you; He has made ships useful to you, sailing the sea by His command, and the rivers too; He has made the sun and the moon useful to you, steady on their paths; He has made the night and day useful to you and given you some of everything you asked Him for. If you tried to count God's favours you could never calculate them: man is truly unjust and ungrateful.

(Qur'an 14:32-4)

O Allah help us to be thankful and just in the way we use all the wonderful things You have provided for us.

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