

Feasta and Waterford City Community Forum

## Responding to the energy crisis

	Today	Future	Savings
Services	€25.70	€30.00	
Food	€20.30	€30.00	
Transport	€16.40	€32.80	
Housing	€ 9.60	€ 9.60	
Drink & Tobacco	€ 7.60	€ 8.60	
Clothing & shoes	€ 6.10	€ 7.00	
House durables	€ 4.60	€ 6.00	
Fuel & light	€ 3.80	€11.40	
Miscellaneous	€ 5.90	€ 8.00	
Total	100.00	133.90	

Please say how you would try to make the necessary savings

FOOD.....

.....

TRANSPORT.....

.....

FUEL & LIGHT.....

.....

THE OTHERS.....(give details on the back).

Age:      Number in household:      Gender: M/F

**Composition of Average Weekly Household Expenditure (%)**

Category	1987	1994-95	1999-2000
Food	25.2	22.7	20.3
Drink and tobacco	8.0	7.7	7.6
Clothing and footwear	6.7	6.4	6.1
Fuel and light	6.3	4.9	3.8
Housing	8.8	9.8	9.6
Household non-durables	2.1	2.3	2.5
Household durables	3.9	3.6	4.6
Miscellaneous goods	3.5	3.8	3.4
Transport	13.6	14.4	16.4
Services and other expenditure	21.9	24.4	25.7
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: *Household Budget Surveys*, 1987, 1994-1995, 1999-2000.

*How the average household budget breaks down. Since 1987, families have had to spend less of their income on food and fuel but have spent more on services. We expect that food and fuel will absorb an increasing proportion of incomes in the future.*

## **Chapter 6: The effects of higher energy prices on the consumer**

How will families change their lifestyles and consumption patterns in order to balance their budgets once their real incomes begin to decline as a result of the rise in energy prices? We explored this question at two public meetings, one in Waterford in April 2005, and the other in Galway in May 2006. At each, the film *The End of Suburbia*, which deals with the consequences of a decline in oil production, was shown. Then, both audiences saw a series of slides indicating that they should expect that the 90% fall in the real price of energy since 1920 in terms of the length of time the average wage-earner had to work to buy a kWh would be partially reversed and that this would make their food and all other consumer goods less affordable. They were given a form to complete (see above) which had on it hypothetical energy-cost related price increases for the major categories of consumer goods and services and told the proportion of their income that their purchases of each made up according to the 1999-2000 Household Budget Survey. How would they seek to balance their household budgets if these price changes came into effect?

The 68 completed forms we collected (42 from Waterford, 26 from Galway) bristle with practical and workable energy efficiency ideas and solutions. Interestingly, there was no discernible difference in the responses from the two meetings although they were held just over a year apart. Some

suggestions from both indicated an awareness of some of the ideas and solutions being championed by environmentalists and proponents of sustainable development, and show that these discourses are beginning to permeate society and reach people in all walks of life. However, other solutions already in use in many places in the UK and here and there in the Republic of Ireland were conspicuously absent, such as using farmers' market box schemes.

Here are the suggestions respondents most often made in relation to food:

1. Buy local food at supermarkets
2. Reduce packaging
3. Cook and bake more at home
4. Eat simpler, more seasonal food and cut meat out of the diet
5. Grow one's own basic foodstuffs using fertiliser from a home compost bin and sell the surplus
6. Set up a LETS (local currency) system
7. Plant hemp for linen and keep sheep for wool

These are the chief suggestions relating to transport efficiency:

1. Car-share
2. Move nearer to the town or city and drive less
3. Walk more
4. Take the bus more for local journeys
5. Use a bicycle for short trips
6. Reduce car size (engine size)
7. Work from home
8. Have government decision to build ribbon housing reversed
9. Take fewer foreign holidays and trips; avoid short haul flights
10. Shop online
11. Swap your present car for a Prius

A small number of respondents suggested thought it might be a good idea if they travelled as much as they could before the oil crisis hits. "In an age of cheap oil, the world is our playground. Three or four hundred euro will get you all the way around the other side of the planet these days" one respondent said. People are clearly reluctant to give up the freedom to fly.. Yet in a more sustainable world, the prospect of slow travel (like Slow Food) might make a welcome reappearance. One might stay longer in a foreign country, having taken quite a bit longer than nowadays to get there, with the result that one might get to encounter more of its culture, rather than passing through the place within a couple of days before jetting off home or elsewhere. Statutory leave might be adjusted to cater for longer but perhaps less frequent holidays.

Here are the most frequent suggestions relating to fuel and light:

1. Use local energy sources
2. Invest in solar and wind-based home energy systems and have the investment subsidised by the government
3. Leave no electrical appliances or equipment on standby
4. Switch off lights when leaving a room (obvious, maybe, but not always matter-of-course!)
5. Use energy-saving lightbulbs
6. Turn the temperature down a degree or two on the heating system and wear slightly heavier clothing at home
7. Install a wood burner
8. Install a geothermal heating system
9. Increase insulation
10. Avoid buying inessential household appliances, e.g. microwave oven, dishwasher, sandwich toaster

The clear impression from both meetings was that people were perfectly sanguine about living in an energy-scarce world, if they had to do so, and were not short on ideas as to how to adjust to it. It was equally clear, however, that few in either audience was about to make any but the least effortful of these changes they suggested until price or some other signal prompted them to do so.

So how might the future for an Irish family look? Rather than listing the changes in the way we have done for the other sectors of the economy in Chapter 4, we decided that it might be better to imagine a typical day in 2020. None of what follows should be taken as a prediction of 'how things are going to be'. It should be read instead as an impression of how some of the ideas currently being considered as likely to help in making the transition to a less energy-intensive lifestyle might translate into daily life. The idea is not to present either a utopia or a dystopia; this is emphatically not social planning. Besides, even our most lucid and perceptive imaginings never match how the future turns out to be. The rich swathes of utopian and dystopian literature through the ages, and particularly in the late nineteenth and early twentieth century, are testimony to that fact.

## **A day in the life.....**

**It's 7am** and the Loop wakes us up with some music from our playlist. Back in 2009 one of the electronics conglomerates devised an intelligent combination of internet, tv and stereo that projects images onto the wall – or the ceiling if you're still in bed. It'll also project wallpaper like a fish-tank, or a starry sky onto your ceiling at night.

This morning we'd just like a news update from Channel 24. The Loop's voice activation switches from music to the news and the headlines are read out to us: *Dublin Airport's second zeppelin terminal has just been completed over budget and well over schedule. ... Scientists at Krenkel Station, Franz Josef Land in the Arctic Ocean are increasingly if cautiously optimistic about the prospects for the polar ice sheets and the effectiveness of the tent that protects vast areas from the sun's radiation. ... In ongoing negotiations, China has just agreed to further devolution for the Tibetan legislature. ... In local news, food markets will remain open an hour later from the end of March onwards to cater for the post-work shopping demand and avail of longer daylight hours.*

**07:05** Time to let the sunshine in. All glass areas are covered during the night to minimise heat loss due to radiation into the night sky. A walk around the house to open all blinds takes three minutes and floods the house with light. It's early spring but the rooms are not at all cold. Our house is built in such a way as to hold a fairly steady temperature all year round. This is done by absorbing radiation from the sun and using carefully chosen insulation materials. Years ago, people used to laugh and say 'Solar in Ireland? Forget it!'. But our passive solar house, the first models of which were built on the continent at the beginning of the century, doesn't rely on the sun actually shining brightly all the time. Daytime light is sufficient. The house retains heat exceptionally well.

Like many on our road, we have an energy surplus at times, particularly in summer. The excess energy feeds back into Eirgrid, which operates net metering. This means that the electricity meter runs backwards when we're producing power we don't need to use. The extra energy comes from our private wind turbine, PV panels and conservatory. Our geothermal system is part of the community geothermal project, a not-for-profit body which manages geothermal hot water and electricity for about fifty local households. Our house temperature is carefully managed on a room-by-room basis. Every room has a thermostat connected to the Loop, so no room is ever warmer than required for immediate daily needs.

Neighbours of ours who have a farm produce an energy surplus all year round. They can do this by using the same kind of energy generation solutions we and our other neighbours use in addition to a burner. The burner, modelled on an Austrian prototype and manufactured in Co. Carlow, takes a good variety of materials – wood chip, seasonal crop chaff, reed stalks from the water purification bed, dried animal manure, wood waste from the many managed forests nearby.

Since they live right next to the river, they have also installed a water mill. Their generator can be run off either the burner or the water-mill. They use the power from the water mill for steady-flow low-intensity appliances, such as the fridge-freezer, lightbulbs, the radio. Supplementary power from the burner is used for high-energy needs such as winter heating and processing farm produce. At the back of the burner is a space for baking and roasting food.

**07:08** Time to wash and dress. The bathroom is much like one from a generation ago but there's no bath. Few people have baths these days as they're considered something of an extravagance. Showers are the norm. The water is heated geothermally with an electric pump providing pressure. Composting toilets have been around now for the past ten years or so. The end product is an effective PH neutral soil fertiliser. The toilet system uses live bacteria and rain water rather than metered mains water. The rain water is run-off water from the roof and the roof garden. It's filtered and stored under the roof. The days of copious soap lather are gone but we don't need bubble-bath and the soap we have cleans just the same. Chemically it's simpler and easier to break down in the waste water system. The toothpaste and soap are both locally produced. Disposable razor blades are very expensive. People tend to buy long-lasting blades that they can resharpen themselves. Hair dryers haven't changed except in price, so they're not widely used, nor are hairsprays and other products in aerosol containers.

**07:35** Breakfast. Here's what we usually eat and drink: tea grown locally in green houses, locally produced yoghurt, porridge, seasonal fruit and bread with preserves. Coffee, oranges, bananas and pineapples, while still available are quite expensive and considered a bit of a luxury – more a treat than an everyday affair. Honey is produced locally though. Quite a few of our neighbours keep bees as a hobby. Some neighbours keep chickens free-range in their back gardens and feed them on scraps from the kitchen. We buy our eggs either from those neighbours or at the local farmers' market.

Our kitchen contains most conventional mod cons. We've an electric cooker and some of the appliances are connected to the Loop to regulate power usage, powering them down or briefly off when there is a surge in demand. Dishwashers are still popular but some people choose to get by without because of their waste water footprint and energy intensity. We use a washing machine and the only detergents available are easily bio-degradable.

**08:00** Ten minutes to hang out the clothes, which were washed during the night while energy demand was low. The clothes dry on a covered clothes line for use most of the year. It's a simple walk-in structure in the back garden with wooden lattice walls on three sides and a corrugated roof. We don't own a tumble dryer. In extremely cold weather we dry clothes indoors.

**08:10** The kids have got up in the meantime and are getting ready for school. We all cross paths in the kitchen for a few minutes. My partner leaves for work. She's a furniture restorer. She shares a workshop with three others 3km away and travels by bike or takes the bus if it's raining heavily. I take the bike too, pedalling to the local fish farm 2km away, where I look after many of the routine farm chores – water checks, food quality checks (mackerel are like pigs – they'll eat almost anything... but there are limits), and incoming orders for the day. More stringent water quality tests are done in the tanks containing the young fish. This is the stage where fish are at their most vulnerable and where avoiding contamination is especially important. The fish are fed on food

waste from restaurants, the local abattoir and nearby households. The food has to be carefully prepared and monitored before use.

**08:50** To get to my other job, which starts between 09:00 and 09:30, I either walk or cycle. Walking takes 35 minutes, biking ten. Electric trams serve the city and suburbs but further out we rely chiefly on buses and trains. These are all electrically powered. Horses are also a not uncommon sight and the odd eccentric even uses a camel. Horse and carriage taxi is a booming business. Some people use electric mo-peds for short trips. For longer distances private cars are used though these aren't cheap to run – they are electric powered (Lipo cells).

Alternatively if you don't have a car you can use the Citizen Taxi System (CTS). This is a commercial enterprise, an evolution of the car-sharing system practised on the continent as early as the 1970s. It exploits modern mobile communication technology and integrated tax and banking systems, allowing complex transactions to take place instantaneously and smoothly.

You simply text your location and desired destination at least one hour before you plan to leave. The Citizen Taxi office will search its database and match your journey to a similar one being undertaken by a registered driver. Your details are then texted to that driver who has already planned to drive this route at your specified time and s/he can pick you up at an agreed location and time. Your CTS smart card is used and is inserted into the car's taximeter (like a credit card box in a shop) – the distance travelled is then recorded and at the end of the journey the passenger enters a pin-number before retrieving their card to validate the journey. The smart card has photographic ID to prevent theft and fraud. This ensures the identity of both driver and passenger. A journey charge is transferred from the passenger's account to the driver's. This is typically about 70% of the cost of a bus ticket for the same route. The registered driver is also eligible for a pro-rata road tax and carbon rebate for every kilometer travelled with an extra passenger on board who is not a family member. The CTS office operates much like a bank, placing a small transaction charge on every journey completed.

**09:15** I've arrived at work having dropped by the post office to trade last month's surplus carbon coupons. Not having made any substantial journeys or engaged in any other emissions intensive activities, I find I have plenty to trade or invest. The current carbon index is favourable and I leave the post office smiling. The carbon trading system began life as the European Union Emissions Trading Scheme back in 2005. Carbon trading means privatising the atmosphere. The atmosphere is public commons – a resource in which everyone should have an equal stake because its preservation is in the interest of all. The privatisation of the sky, which is what a carbon trading scheme amounts to, was ultimately done on a per capita basis. This was because every other version of the scheme, such as free allocation of emissions rights to companies, caused gross distortions in the carbon market, failed to reduce emissions sufficiently to control climate change, and not least perversely led to a transfer of the ownership of a public good into relatively few private hands. The per capita scheme has allowed us to reduce

emissions effectively and steadily curb the worrying trend that accompanied rampant global economic growth. Energy prices are high compared with the turn of the century, it is true, but a combination of effort and ingenuity, backed up by new products and practices that have steadily gained in credibility and status in the marketplace, have allowed people to become quite a bit more efficient in their energy use.

The carbon trading system gained global currency when China concluded negotiations to enter the scheme and quickly joined Europe by rolling out a citizens' carbon credit scheme. This scheme distributes emissions rights on a per capita basis, with carbon coupons going to all citizens over 18. The carbon coupons can be used to cover the emissions output of fossil fuel the individual consumes. However, if a person manages to use less fossil fuel than his or her allocation allows, then s/he can sell the coupons on to someone requiring a bigger allowance or s/he can retain the coupons as carbon futures. This makes for a certain amount of compensation for high energy prices.

The office where I work for 4 hours a day, 5 days a week is an advertising agency. The building is carbon neutral, and employs most of the new energy-saving technologies - wind turbines, geothermal heating, careful material selection to ensure good thermal properties, i.e. adequate heat retention and dissipation. The building uses daylight effectively so use of electric light is minimised.

The agency has a broad portfolio of clients, including suppliers of renewables technology, IT systems and purpose bred crop seeds, as well as the accounts of a broad range of local businesses and services. It's a paperless office. Sophisticated electronic PAs keep people up-to-date instead of paper records and post-it notes. Encrypted files have even supplanted paper contracts and all money transactions are conducted electronically. In most sectors paper is largely a thing of the past.

**13:30** Now I'm home again for lunch, which is a quick affair – local fish, potatoes and vegetables, with lots of herbs for their nutrients. If the weather's good and she's not too busy, my partner returns from her work to join me in the meal. Sometimes the kids come home for lunch too, more often they stay at school. As we are eating, a news and weather bulletin announces the likelihood of a strong to severe storm for the late evening. Weather and storms are a lot more erratic – this has impacted everything – insurance (storm damage), fishing, cargo shipping and air travel. Thankfully modern climate modelling and satellite technology mean that the science of early warning is that bit more effective and so many situations that would previously have been calamitous can now be anticipated and managed. The benefits of this accurate climate science have been reaped by all weather-sensitive enterprises including farming, sea-faring, etc. but storm damage is still an unavoidable fact of modern life.

Because storm damage is no longer something that one can insure against, most modern houses are designed with weather proofing in mind. That means

that they are to a degree 'wind-dynamic' and are capable of emerging unscathed from all but the most violent of storms. This has been accomplished by using clever construction techniques and roof line profiles, and by positioning the buildings relative to other adjacent buildings such that destructive wind-shear and wind-tunnel effects aren't possible.

**14:15** After lunch my partner and I take a few minutes to give the green houses a quick run-around, keeping an eye on weeds, pests and humidity. Animal dung and home-produced compost make up the fertilisers. Market gardening is practised widely and every scrap of green is put to use, with herb and vegetable patches even on the roofs of buildings. In our back garden we have two apple trees, rhubarb, lettuce and cabbage, radishes, carrots, herbs, potatoes, onions, herbs, strawberries and blackcurrants.

**14:30** I'm back on my bike to the fish farm. In the afternoons I do some of the admin work, which involves managing the accounts, keeping the books and making sure deliveries are run on time etc. It's a decent crew of people working there but we all smell a bit fishy!

At weekends there is commercial fishing for wild fish. This is tightly regulated to ensure stocks are properly managed – wild fish sells at a premium and is seasonal. Shellfish are also harvested – one of the many benefits of our now fairly pristine coastal waters. Fresh and sea water pollution is no longer on anything like the scale that it used to be, thanks to comprehensive regulation which has underpinned a broad variety of clean-up and water processing technologies.

**18:30** After work, usually at about six or seven, many people go to the market. This is basically a mall with large areas for farmers' and craftspeople's stalls. A wide variety of goods is sold and most of it is locally produced, from tools to clothes to food. Most of what is available is produced within a 50 kilometer radius, with only a few items coming from further afield – many of the electronics are imported and people still enjoy tv and computer games, mostly through the Loop, as a main form of entertainment. Computers are manufactured locally and are a major employer in the area. Shopping isn't like before – packaging is greatly reduced – refillable glass containers are ubiquitous and people use wheeled carrier carts like airline cabin cases or backpacks to carry things about.

Shopping is as much a social occasion as anything else and is one of the main opportunities for people to meet and catch up on news and gossip. As such the market has replaced the compulsive consumption of the mall with the sociability of the pub and has to a large degree succeeded in retaining the best aspects of both while losing their worst excesses. At the market, there are cafés where local beer can be had as well as imported coffee and local teas and juices. People spend anything from half an hour to the whole evening wandering through the market, depending on whether they're mainly shopping or socialising.

**19:30** Our evening meal consists of a roast of locally bred lamb, rice shipped from India and spring vegetables from the market. After the meal, my son does a round of the house to close all the blinds.

**20:30** My daughter is looking for some assistance with a school project, a business plan that will be set up and run as a business with a fixed start and finish date, balance sheet and comprehensive feedback on learning outcomes, including financial, resource and person management.

Education in general is quite similar to what it was at the turn of the 21<sup>th</sup> century, but with a greater emphasis on economics/business and practical and technical skills as well as social and negotiating skills, which are seen as vital to a smooth-running community. Gardening/farming and machine maintenance and repairs and now core elements of the late primary and early secondary curriculum. Consumers no longer accept inbuilt obsolescence in the appliances they buy and most people have a set of basic repair skills or trade other skills for these using local currency or credit systems such as LETS. There is a growing spare parts industry involving manufacture and trade plus training for advanced repair and maintenance skills. Workshops, projects and business model development are now also core elements in most school curricula.

Just as they were last century, science and technology are key subjects as the techniques, innovations and efficiencies gained from them have benefited almost every growing sector of our economy, such as commercial and domestic horticulture, tourism and the IT industry.

The local school, as with most buildings, is energy optimised. School hours are shorter in winter to save on light and heat and summer holidays are shorter. Most of the materials used, including paper, are locally produced and much is made from recycled paper.

**22:15** We watch a documentary on Venezuela and how it is absorbing a steady stream of economic migrants from the US.

**22:55** At the Loop, along with my partner and eldest daughter. We can access it from several points in the house, allowing us to browse collectively, compare notes on info we find and float suggestions. We're looking for a holiday in Northern Spain. Holidays and leisure activities are quite different these days compared with twenty years ago. Long-haul flights are still a possibility but the days of cheap flights and bargain holidays in the sun are over. Conventional air travel is once again a fairly exclusive thing, with all but the fairly wealthy opting for less expensive alternatives. Zeppelins are back and offer a slower and more affordable version of air travel. Europe to South America or Asia takes about 4 or 5 days, depending on weather.

A friend has recommended an adventure package holiday that includes zeppelin transport, a 24-hour trip each way. By way of comparison, the aeroplane to Spain is ten times faster but twenty times as expensive. We book the zeppelin option for the last two weeks in May.

Different regions take holidays at different times of the year to avoid excessive transport demand, and spring and autumn holidays are almost as popular as summer breaks. Winter sports are no longer the mass pursuit they used to be – glacial recession and a rising snowline have meant that they too are increasingly the preserve of only the well-to-do. Likewise the maintenance and operation of the lift systems has proven prohibitive with many simply falling into disuse and having been scavenged or dismantled for scrap. However, backpacking is still thriving if not quite as popular as it used to be.

As with every other aspect of life, IT has also revolutionised travel. Guidebooks are largely obsolete with up-to-date downloads, available on wireless e-books, purchased chapter by chapter or book by book. Google Earth has merged with travel guide publishers to offer a fully integrated interactive travel search and research tool. You simply click on your chosen country, city, area or building and a variety of competing guide book chapters are offered. Further options from the guide book chapters allow you to book transport, accommodation and events.

**11:20** The clothes from the line are in a pile in the utility room. My partner took them in before dinner – dry but a touch on the chilly side. A few minutes and they're folded and put away in the airing-cupboard, where they'll dry out fully. Time for sleep.