An Taisce
The National Trust for Ireland

THE **2016** ISSUE

AN TAISCE

10 WAYS TO MAKE IRELAND'S TRANSPORT SYSTEM MORE SUSTAINABLE

FOOD FOR THOUGHT
THE IMPACT OF WHAT WE EAT

MORE GREEN HOMES = LESS GREENHOUSE GASES

Planning for *Climate Action*



PRESIDENT
MICHAEL D. HIGGINS
ON CREATING A REPUBLIC WE CAN BE PROUD OF

ANNUAL MAGAZINE OF AN TAISCE - THE NATIONAL TRUST FOR IRELAND

An Taisce
The National Trust for Ireland

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from the Editor



Eoin Heaney

Our climate is being drastically altered by human actions. This is not news. The implications and limited time left for action is what should be at the top of every bulletin.

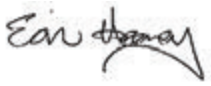
This year's magazine takes a big picture view of where Ireland's emissions are being generated; how we get around, where we get our energy, what we put on our plates. But the focus is not on the challenge, it is on the solutions.

As an organisation, An Taisce is taking a hands-on approach through our education programmes and by gearing up for a carbon storage project on one of our peatland properties in Co. Offaly. In these pages, Alannah Ní Cheallaigh – Mhuirí writes enthusiastically on the importance of this concept.

Elsewhere, Enda Buckley provides 10 ways to make Ireland's transport system more sustainable, while Sadhbh O' Neill looks to the Nordic experience for inspiration. Special thanks should be accorded to Judy Osborne and Ian Carey for their work in editing this publication as well.

We are indebted to President Michael D. Higgins who has shared his thoughts on climate justice and our collective responsibilities. Ireland is incredibly fortunate to have such a visionary figurehead who fully comprehends the gravity of the situation.

What is needed immediately is a coherent and actionable plan. We continue to call for a Department of Climate Action to set goals and implement policies. This will only happen when politicians feel obliged to act and thus, we ask you to spread the word and encourage friends and family to join us in our mission to put climate action at the top of the agenda and effect change through weight of numbers.



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Credit: Chris Bellew/Fennell Photography

A Message from the President of Ireland

At the beginning of 2016, I visited some of the areas that have been badly affected by the recent flooding in Ireland. I heard, first hand, the experiences of the people whose homes and livelihoods had been destroyed by the water. I saw the devastation in their faces and heard the despair in their voices. It was a shocking reminder of our great vulnerability as inhabitants of a fragile planet threatened by global warming, pollution and the exploitation and destruction of its resources.

It was also a great reminder of the enormous responsibility we all share to protect our environment, to play our part in preserving the planet for our own and future generations.

Readers of this magazine will be more than familiar with the statistics and reports, and privately I am sure, many of you will have wondered whether the challenge is just too great. For it is undoubtedly hard to remain optimistic in the face of the procrastination, hesitation and confusion that has surrounded



international policy making on such crucial areas as CO2 emissions, transport, food production and energy consumption. And nationally, we must conclude that despite years of effort, environmental concerns continue to fail to make sufficient traction in public discourse and political decision making.

Yet, it is important to highlight that progress is being made. In Ireland today, we have thankfully become somewhat more aware of the serious consequences of failure to protect and conserve our environment and we have become more alert to the importance of ensuring that the society and world we leave behind us will be ethical and just. With that awareness has come an understanding of the moral questions raised by the damage inflicted on our planet by climate change, and of the need to preserve and protect the earth's natural resources.

December's climate conference in Paris, during which 195 countries adopted the first-ever legally binding global climate deal, also marked a significant shift. The universal approach contained in the Paris Agreement constitutes a recognition that in a globalised world, problems and their solutions can only be defined, understood and faced at the global level. It provides an important part of the policy infrastructure that is necessary to ensure that the actions of informed citizens, companies and public institutions also bear fruit.

The new Sustainable Development Goals, agreed in New York last September, invite all of us – governments and citizens, employers and employees, rich and poor – to commit to our own programmes of action towards a better world. And while we must not create the impression that individual action alone will be sufficient to turn the tide on climate change, hunger and extreme poverty, we must at the same time not lose sight of the many small ways in which we can, each of us, make significant contributions to that great global welfare. As citizens, voters and consumers, it is our duty to constantly look at how we can do things better, both at 'micro' and 'macro' level. As global citizens we are honour bound to do our utmost to create a cleaner, safer and better world, for all.

Margaret Mead famously told us to "never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has." And this year, 2016, we are invited to commemorate how a small group of people in Ireland, one hundred years ago, had the courage and vision to re-think the path that Ireland was on.

The people involved in the 1916 Easter Rising differed greatly in their reasons for pursuing Irish independence and in the priorities they emphasised within their definition of freedom. And they took upon themselves a sheer impossible task, facing overwhelming odds. Yet, because they pooled their efforts and were united in their efforts, they were able to create for us the possibilities we enjoy today.

Easter 2016 should be a moment for us, together, to recognise the great gift that is our independence, and to celebrate what can be achieved with determination. The centenary of the 1916 Rising should for us be a time for looking back and remembering, as well as a time for looking to the present and the future, asking ourselves how we have used our freedom and what kind of a future we are crafting for generations to come.

1916 was about more than military or political actions – it was also an act of imagination. The leaders were inspired by the idea of creating a very different Ireland and they believed in a social as well as a national revolution in which every facet of Irish life could be improved. I suggest that in our new global context, where the nations of the world have made new shared commitments in the areas of sustainable development and climate change, we are now again at a moment of imagination.

The moment of commemoration prompts us to reflect on what it is to be an active and responsible citizen; of the duties, and not just the privileges, that come with the freedom of citizenship. The present reality of these great international issues causes us to remember the responsibility we all share to create a Republic of which we can be proud, and to play our part as global citizens in a shared world.



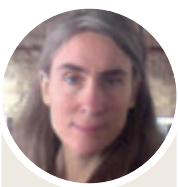
President of Ireland, Michael D. Higgins officially launched the Green-Schools Expo 2016

"WE ALL SHARE A RESPONSIBILITY TO PROTECT OUR ENVIRONMENT, TO PLAY OUR PART IN PRESERVING THE PLANET FOR OUR OWN AND FUTURE GENERATIONS. "



President Higgins visits UCD to attend a student event as part of the Ethics Initiative.

IS SHARING THE ANSWER?



AUTHOR
Caroline Whyte

CAROLINE WHYTE, FROM FEASTA, THE FOUNDATION FOR THE ECONOMICS OF SUSTAINABILITY, DESCRIBES AN APPROACH TO DEALING WITH EMISSIONS CALLED CAP AND SHARE, WHICH COULD SEE EMISSIONS PLUMMET WHILE PROTECTING SOME OF THE POOREST IN SOCIETY.

Could you imagine a world in which poverty was substantially reduced, so much so that there would be very little hunger and malnutrition? A world with significantly less inequality, both within and between countries, than is the case now, and where all the evils associated with high inequality – crime, violence, health crises, erosion of trust and community – were also substantially reduced?

DOES THAT SOUND UTOPIAN?

- How about this: could you imagine a world in which substantive climate action was achieved at virtually zero cost to governments?
- Or a world in which any individual or family who used a less-than-average amount of fossil fuel actually came out ahead financially?
- You might be thinking that these things all sound pleasant, but that we need to concentrate our efforts on the main priority: getting emissions down. After all, we're facing a menace that is as serious as war.
- But what if a programme was introduced that ensured that fossil fuel production was steadily reduced to zero by 2050 at the latest - with no loopholes, no offsetting, and no unspoken reliance on geoengineering?
- What if it created a consistent, predictable framework to support the growth of renewables?
- What if it halted the rebound effect in its tracks, so that instead of improved energy efficiency being undermined by increased energy use, improved energy efficiency would actually lead to what it's supposed to lead to - fewer emissions?
- What if the programme eliminated a major threat that all the other initiatives described in this magazine face - the fact that their efforts could be undermined at any time by some random individual or group which has enough money and enough contempt for climate science to not care how much fossil fuel they buy and consume?
- What if it instead enabled all these initiatives, and others, to flourish and make a significant impact in Ireland and elsewhere?
- And finally.....what if it brought about the kind of world described in the first paragraph of this article?



Aviation was excluded from the landmark climate accord in Paris in December. But carbon emissions from the sector could triple by 2050 if left unchecked, warned the International Coalition for Sustainable Aviation, representing a half dozen non-profit groups. The International Civil Aviation Organisation has until October to finalise a deal that would cap and cut the carbon pollution of all international flights. The market-based plan must win the support of the industry's 190 member countries at its Montreal assembly, or risk the EU breaking off talks and imposing its own emissions trading plan on international airlines.



AM I SERIOUS? YES. HERE'S HOW IT WOULD WORK.

The programme is called Cap and Share. It was first developed ten years ago by a group of people in the Feasta Climate Group including the late Richard Douthwaite and the late Will Howard.

It has two main components:

1. Permits are sold to fossil fuel companies to allow them to extract fossil fuel. The amount of permits available diminish from year to year, reaching zero in 2050. This sale of permits (and the enforcement behind it) is the "cap".
2. The money raised from the sale of the permits is distributed worldwide on a per-capita basis, with the help of technology such as mobile phones and smart cards. This is the "share".

HOW IT COULD BE IMPLEMENTED

For a long time, we in the Feasta Climate Group assumed that the only way forward was to convince governments to sign onto Cap and Share individually. Unfortunately, governments seemed much more willing to listen to the fossil fuel industry. Also, even if some governments did sign onto the programme, it wasn't clear how others could be persuaded to do so.

So now we're instead planning a twin-pronged approach. The first prong is that we try to persuade fossil fuel companies to sign onto the programme voluntarily. There could be a 'fair trade'-type label for those who complied.

"COULD YOU IMAGINE A WORLD IN WHICH POVERTY WAS SUBSTANTIALLY REDUCED WITH SIGNIFICANTLY LESS INEQUALITY?"

They would be committing to a comprehensive transformation, over the next couple of decades, in their activities - a winding down of their fossil fuel production and a complete transfer of their resources and investment elsewhere. They would also be committing to forking out large sums of money every year in order to buy production permits. Finally, they would allow third-party monitors to check that they are only extracting the permitted amount of fossil fuel each year.

There is, of course, a good chance that these companies – or some of them anyway - might not be willing to listen to us. This is where the second prong of the approach comes in: legal action. Following on from the successful recent legal campaigns in the Netherlands and elsewhere on climate action, we would organise law suits to enforce responsible behaviour from fossil fuel companies (this could also be done against governments). The court orders would require compliance with Cap and Share. And so the companies would have to do the same things as they were requested to do voluntarily, but without any brownie points.

Cap and Share is necessary if we want to make sure that all our other climate initiatives will make an impact. Luckily, it's also extremely inspiring.

CAP AND SHARE

The capandshare.org website explains the system in more detail. There are only a small number of companies that bring fossil fuels into the world economy but millions of cars, houses and factories all over the world emit CO2 by burning these fossil fuels down the line. It's much easier to cap the fossil fuels - coal, oil and gas - entering the chain than to try to control the emissions they cause. So Cap & Share is what is called an 'upstream system'. The cap is enforced by requiring the fossil fuel suppliers to have permits to bring fossil fuels into the economy. The size of the cap determines the number of permits issued. Petrol and other things will cost more, but although some prices go up, you're compensated by the carbon 'cash back' income. And if you have a smaller carbon footprint than average, you'll come out ahead.
Laurence Matthews

feasta

If you're interested in helping us, we would love to hear from you. Please come to our planned events in Dublin on June 8 and Cloughjordan on June 9. In the meantime, please also take a look at www.capandshare.org and www.capglobalcarbon.org

Ending our Throwaway CULTURE

WE ARE LIVING IN A DISPOSABLE AGE BUT TO STOP THE EVER-INCREASING DEMAND FOR ENERGY AND ABUSE OF OUR NATURAL RESOURCES WE NEED TO MOVE TO A MODEL OF REUSING EVERYTHING. IN THIS ARTICLE PROFESSOR OF GREEN POLITICAL ECONOMY, **JOHN BARRY**, FROM QUEENS UNIVERSITY, BELFAST DISCUSSES THE CIRCULAR ECONOMY AND HOW IT IS THE ONLY WAY FORWARD.



AUTHOR
Professor
John Barry

There is much we can do to replace dirty fossil fuels with clean renewable energy but this will not be enough on its own to keep global temperatures from increasing and ultimately disrupting society. If we choose to protect our families from this distopian future we must also reduce the demand for energy. This can be tackled from many different angles but the most pervasive impact can be achieved by shifting to a circular economy.

The idea behind the circular economy is very simple – for a sustainable economy we need to move away from the linear 'take, make and throw away' logic of the industrial economic system – whereby we take resources from the planet, make products/energy/services and then produce waste (causing environmental, health and social problems as well as costing and wasting money). It is important to understand the unsustainability of each step of this 'take, make and throw away' economic system.



Sharing and services will increase with a circular economy. *Photo: John Sattar*

• **'TAKE'** – our current economic system either uses non-renewable resources (such as fossil fuels) or often uses renewable resources (food, the soil) beyond their regenerative capacity - a pattern we have employed since the Industrial Revolution. As well as taking resources from the natural world our current economic system also 'takes' from society – for example, transforming the human, social and creative capacity for making things into mere 'labour' which often excludes or downplays the creative and social aspect of meaniful work found in decent jobs.

• **'MAKE'** – our industrial system produces products and services for consumption using natural resources, transformed by human technology and creativity. Key elements of this production-consumption process is the dependence on carbon/fossil fuel energy and an in-built imperative for 'more and more' consumption (what we call 'consumerism' or excessive consumption) and greater and greater productivity and producing more and more with less and less labour.

• **'THROW AWAY'** – much, if not most, of the products created in the modern economy are non-durable, meant for use a couple of times or for a short time and then disposed of as waste, or outdated and/or 'out of fashion'. Terms like 'built-in obsolesce'. This linear economic model in producing pollution or waste should be viewed as 'matter out of place' i.e. the wrong thing in the wrong place. The fact that there is no waste in nature gives us a clue and starting point for outlining the circular economy.



ZERO WASTE:

As climate change economist Nicholas Stern has noted, "Recycling is already making a major contribution to keeping down emissions. Indeed, its scale is so little appreciated that it might be described as one of the 'best kept secrets' in energy and climate change…."
See eurowasteeurope.eu

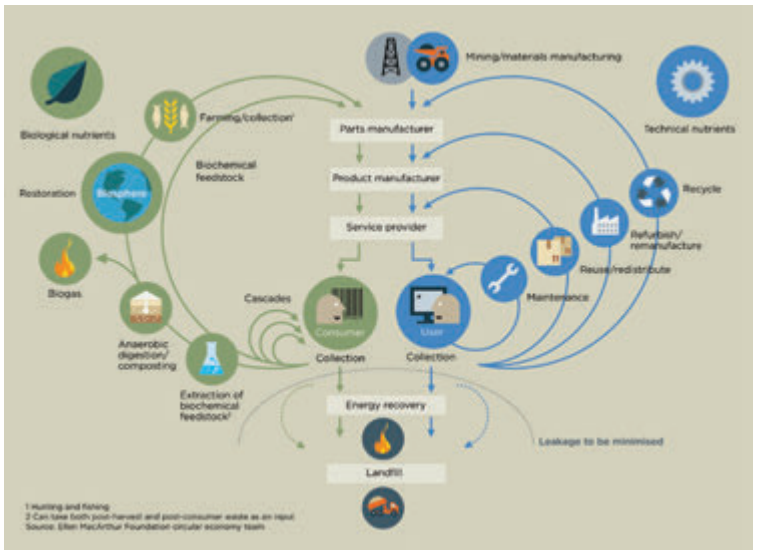


Diagram 1.

"THERE IS A MISUNDERSTANDING THAT A SUSTAINABLE ECONOMY REQUIRES US TO 'GO BACK' TO A PRE-INDUSTRIAL RURAL ECONOMY."



Dutchman Frans Timmerman, Vice President of the European Commission, with responsibility for Better Regulation presents the EC Circular Economy Package, which includes revised legislative proposals on waste aiming to stimulate Europe's transition towards a circular economy. This will include:

- **A common EU target for recycling 65% of municipal waste by 2030;**
- **A common EU target for recycling 75% of packaging waste by 2030;**
- **A binding landfill target to reduce landfill to maximum of 10% of all waste by 2030;**
- **A ban on landfilling of separately collected waste;**
- **Concrete measures to promote re-use and stimulate industrial symbiosis - turning one industry's by-product into another industry's raw materials.**

THE CIRCULAR ECONOMY

There are many ways to understand the circular economy – what follows is just one. We can start by heading off a common view of a circular or sustainable –green economy as one that is 'pre-industrial' or anti-industrial. This is the misunderstanding that a sustainable economy requires us to 'go back' to some pre-industrial rural economy.

A circular economy is one that is restorative and regenerative by design and aims to keep products, components, and materials in their use for as long as possible. It divides our modern system of production and consumption into two spheres – a 'technical sphere' of artificial human made components and elements and a 'biological/ecological sphere' of natural components and elements. Diagram 1 outlines these two spheres of the circular economy.

Both spheres should be kept separate – i.e. technical waste products should not be land-filled or poured into rivers or the sea. Only waste that can biodegrade and be a nutrient for a natural system should be replaced back into the natural system (that is putting waste matter back in place). The waste from technical processes should be reused and recycled – i.e. mimic the natural principle of there being no waste in nature. Examples of this include everything from the idea of a 'zero waste economy' based on the idea that any production system that produces waste is a sub-optimal system and also includes old sayings such as 'where there's muck there's brass' i.e. waste is wasted wealth.

Key elements or principles of a circular economy include decoupling economic production from resource and energy use – central to which is designing an economy which uses ecological /natural 'income' rather than 'stock'. For example using renewable energy (solar, wind, wave etc.) rather than, as their name suggests, finite stocks of non-renewable dirty fossil fuels (coal, oil and gas). Other principles include maximising the circulation of 'technical' and 'natural' nutrients, so no value is lost or pollution caused – this is a real 'zero-waste' economy.

A key dimension to the circular economy is designing out waste from the beginning rather than having to implement 'end of pipe' remedial solutions. Here we can view the growth in health and environmental legislation implemented to prevent environmental pollution and negative impacts on health as signs of a flawed economic model. Why should we need rules, laws and regulation to prevent negative ecological or health or social effects of production? Another is the recognition of the obvious reality that the economy is completely dependent not just on the natural world (it's a sub-system of that larger system) but dependent on a healthy ecosystem. And this leads then to an often under acknowledged dimension of the circular economy – namely that if the larger system (the earth and its various component elements) is not growing, why on earth do we think a sub-system – the human economy – can grow indefinitely? Thus, does the circular economy not only mark a paradigm shift about how we view the economy, but also herald a shift beyond 'endless economic growth'?

The three R's of Ireland's energy future: REDUCE, REDUCE, REDUCE!

INDUSTRY AND GOVERNMENT WOULD HAVE YOU BELIEVE THAT IRELAND NEEDS TO RAMP UP RENEWABLES TO SECURE OUR ENERGY FUTURE. BUT A COLD HARD LOOK AT THE FIGURES REVEALS THAT THE ONLY WAY WE WILL ACHIEVE OUR TARGETS IS TO SERIOUSLY REDUCE THE AMOUNT OF ENERGY WE USE.



AUTHOR
Ian Lumley

None of the "renewable" technologies currently available can be ratcheted up to a scale sufficient to substitute for existing fossil fuel use. There is no future technical solution to avert catastrophic climate change that will allow current life styles to endure. Communicating this to decision makers, media and the public at large, is the first step in achieving the scale of action needed in advancing solutions.

CURRENT ENERGY TARGETS MUST BE DOUBLED

If Ireland and the EU are to achieve an equitable per capita carbon budget below the 2° target in the 2015 Paris Agreement, then much more ambitious measures than those in place for 2020 or beyond for 2030 are required. Climate scientist Kevin Anderson has outlined the need for more than doubling of current emission targets as well as positive recommendations for action.

The 2016 Energy White Paper is way short of the specific measures required. The 2020 target of 40% renewable electricity generation is in doubt with rising rural opposition to wind turbines and pylons. Furthermore the effectiveness of a percentage-based target is undermined by rising consumption including international Data Centres. In March 2016 the EPA published a report predicting that Ireland's non- Emission Trading Scheme (ETS) sectors namely agriculture, transport, residential, commercial, and waste are projected to be only 6 - 11% below 2005 levels by 2020, compared to the required EU 2020 target of 20% with transport increasing by 10- 16% on 2014 , as well as relying on the notional reduction of up to 10% through increased imported bio fuel content.

INVESTING IN ENERGY EFFICIENCY

The reduction of primary energy demand should be the first and overriding policy objective, cutting current electricity, heating and transport fuel use, while at the same time using night-time electricity for non time sensitive uses like washing machines and vehicle battery charging.

Incentivising the most energy efficient appliances and vehicles needs renewed action at EU level. An annual multi billion national programme for energy efficiency of domestic and other buildings is entirely within national capacity and eligible for European Investment Bank support through direct financial support for households in fuel poverty and other incentive measures.

THE RENEWABLE OPTIONS FOR 2020 AND BEYOND

Irish renewable electricity capacity will continue be largely achieved through wind, best advanced though enhanced community shareholding participation. This will require grid interconnection with UK and the continent, as well as within Ireland. If opposition to turbine capacity and pylon

ALL OVER THE WORLD INSTITUTIONS ARE DIVESTING FROM FOSSIL FUELS

An Taisce has joined renowned Irish and international public figures, including Noam Chomsky, John Sweeney and Fr. Sean McDonagh in support of a number of Trinity College Academics calling for the Trinity College Board to divest from its €6.1 million holdings in fossil fuel companies.



Development plans could include controls requiring housing estates to include solar panels, as in this Nottinghamshire estate in the UK.



Switching from fossil fuel to electric cars will not reduce congestion or the social impact of long commutes but will help to reduce carbon emissions once we increase the supply of renewables.



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One of the key benefits of renewable energy is the ability for these energy sources to be developed at a local level bringing local benefits. Templederry Community Group developed wind energy as part of the 'Environmental Protection' goal within their Community Development Plan. Over a number of years the group got planning permission for 5 turbines on the edge of the Slieve Felim mountains between Nenagh and Thurles in Co.Tipperary. The group started producing Green Electricity and selling it to the grid in November 2012. The project is 100% owned by the local community with dividends from the project being re-invested to support other community activities.

"THE REDUCTION OF PRIMARY ENERGY DEMAND SHOULD BE THE FIRST AND OVERRIDING POLICY OBJECTIVE."

routes proves an impediment, then increased electricity prices will be needed for supporting offshore locations which have a higher development cost.

Solar technology is making a critical breakthrough and will play a significant role in Ireland over the next decade to a level that cannot yet be projected. To date a number of planning applications have been made on land in the south of the country. The 2015 French initiative for solar roofs in new builds should be applied while also incentivising the large scale retrofitting of industrial roofs and car park areas with panels to feed back into the grid. The availability of wave/tidal or other technologies including energy storage is still not at the stage of any large-scale application, and it is not clear when that will occur.

The potential for achieving energy from biomass and the loss or gain of emissions through land use change and forestry (LULUCF) which will be required after 2020 poses both opportunity and challenge. There is some potential for new biomass crops and for growth in forestry cover provided that is does not conflict with maintaining the stability of peat soil carbon and biodiversity enhancement e.g. an effective threat response plan for hen harriers. There is also potential for bio energy from agricultural and other waste.

There is a current unsustainable market created by EU rules designating imported bioenergy as " carbon neutral " This includes transport and heating fuel, wood pellets and most absurdly palm kernels from south east Asia for the Bord na Móna Edenderry co-fired peat power plant. Diluting fossil fuel combustion with a token bio fuel content perpetuates outmoded technologies, disincetivises alternatives and creates an emission impact in other countries, which will have to be accounted for. The international NGOs are taking an increasingly critical stance on bio energy emphasising that its capacity is limited, its real emission impact needs accounting and conflicts with food production, biodiversity and indigenous peoples' land use.

Some preliminary modeling on Ireland's capacity to reduce emissions has been done through EPA funded research by UCC. Any assumption of imported bio fuel and any over

TIME TO MAKE SOME SERIOUS CHOICES

"The latest projections estimate that by 2020 non-ETS emissions will at best be 11% below 2005 levels compared to the 20% reduction target. Emission trends from agriculture and transport are key determinants in meeting targets, however emissions from both sectors are projected to increase in the period to 2020." ***EPA March 2016***

COMMUNITY ENERGY ACTION

€20 million has been made available for local communities under the Better Energy Communities scheme in 2016. The scheme, administered by the Sustainable Energy Authority of Ireland (SEAI), has supported 260 community energy efficiency projects over the last four years. Over 12,000 homes, community, private and public buildings have received energy efficiency upgrades. If you are interested in establishing a group in your area contact www.seai.ie



There is no case for including biofuel imports including wood from North America as any part of Ireland's energy future. The use of wood combustion for electricity generation is inefficient in energy return and resource use because of heat loss. There is a potential use of forest thinnings in local catchments for Combined Heat and Power (CHP).

optimistic projection of national production capacity must be reassessed.

The need to have full carbon accounting for peat drainage and extraction, reinforces the imperative of an immediate exit date for ceasing peat burning for power; a timetabled phasing out of a polluting domestic fuel as well as imported coal use presents a huge opportunity for community energy schemes.

TRANSPORT

The level of Irish transport emissions is worsening with sprawl and increasing car dependence. Electrification is the optimum substitute technology for the future car fleet, but the alternative energy source for HGVs is more difficult to project with bioenergy limited in capacity. As an immediate measure further significant incentivisation is required for more fuel efficient commercial vehicles as well as cars. Fuel source switching is only part of the solution. Transport demand must also be curtailed as outlined in the Department of Transport's 2009 Smarter Travel policy, with road pricing and ending of free out of town retail and commuter parking. This has the multiple benefit of reducing sprawl, congestion and air particle pollution as much as climate emissions. The effectiveness of this year's National Planning Framework due to be published by the Department of the Environment, will be determined by the introduction of legally enforceable measures to put a halt to further car based development.

"A MULTI BILLION PROGRAMME FOR ENERGY EFFICIENCY IS ENTIRELY WITHIN NATIONAL CAPACITY AND ELIGIBLE FOR EUROPEAN INVESTMENT BANK SUPPORT"

CONCLUSIONS

The precise mix and timing of the efficiency gains and technologies, incentives and disincentives needed to achieve a zero carbon future are not yet clear. However the immediate actions needed both nationally and globally are beyond doubt: to make major upfront invent investment in efficiency and reducing energy demand, incentivise a range of renewables, promote land use and transport policies to reduce private vehicle use, curtail aviation and shipping growth, and account for and mitigate the transboundary impact of all energy and resource use.

An Taisce will continue to take an active role in energy consultations and in advancing the need for climate mitigation and adaptation though its role as a consultee in the planning process and the engagement of communities in the opportunities and actions required.

CAN YOU IMAGINE A POST CARBON IRELAND?

In the face of the planetary-scale emergency now posed by climate change, a group of leading academics have launched a campaign for a Citizens' Convention for a Post-Carbon Ireland. Prof. Barry McMullin (Chair of An Taisce's Climate Committee) suggests that only such a convention can enable the sustained, citizen-led, engagement that is now essential to unite all of society in planning and creating a just transition to a secure, flourishing, and authentically sustainable post-carbon world. see postcarbonireland.org



A NORDIC Solution TO AN IRISH PROBLEM

FOR YEARS POLICY MAKERS AROUND THE GLOBE HAVE LOOKED TO NORDIC COUNTRIES ON HOW TO DEAL WITH MANY ISSUES. IN THIS PIECE, WRITER **SADHBH O'NEIL** LOOKS AT HOW THE SWEDES ARE DEALING WITH THE THREAT OF CLIMATE CHANGE AND ASKS WHAT WE CAN LEARN FROM THEM.



AUTHOR
Sadhbh O'Neil

The environment has been on the political agenda in Sweden for a long, long time. When John Hinde's photos of Irish redheads on donkeys were capturing the zeitgeist of Ireland in the 70s, Swedes were already appreciating the loss of their natural resources to forestry, mining and heavy industry. The Swedish Environmental Protection Agency (SEPA) was established in 1967, a full 25 years before the establishment of a similar body in Ireland. Crucially the SEPA has a clear policy development and implementation role, unlike the Irish EPA.

POLITICAL SUPPORT FOR ENVIRONMENTAL QUALITY

In the 2015 Standard Eurobarometer survey, 26 per cent of Swedes note environment and climate change as a main concern, compared with 6 per cent at EU level. But the environment is not taken for granted in Sweden: it is still a contested political issue. The 2014 election saw a Green / SD coalition come into power with 'feminism, environmental responsibility and social security' declared priority issues of the new government programme. The Greens now have two

ministers including Åsa Romson who is the new Minister for Climate and Environment and Vice Prime Minister. However even this very environmentally-friendly government has come under criticism by Friends of the Earth Sweden, who have nominated the Green Party for the 2016 Greenwash Award for failing to disband Swedish utility giant Vattenfall's lignite coal operations in Germany (the government sold the operations instead).

The government's 2016 budget statement allocated SEK 4.5 billion (that's nearly half a billion Euro) for infrastructure, technology, and tax reforms aimed at reducing greenhouse gas emissions. These are just the latest of a series of environmental measures which include the closure of a Stockholm city airport, with the land going to social housing.

"THE HIGH RATE OF CARBON TAX IN SWEDEN HAS NOT DETERRED INVESTMENT, BUT HAS FUELLED FINANCIAL SUPPORT FOR INNOVATIVE TECHNOLOGIES SUCH AS BIOGAS GENERATION"



Sweden's nuclear programme was initiated in 1972 and currently 10 power plants supply 40% of electricity with the balance mainly provided by hydropower stations currently supported by wind power units. It is still controversial with several changes in policy over the years. Most recently Sweden's new Social Democrat-Green government seeks to phase out nuclear power entirely whilst meeting Sweden's goal of reducing GHGs by 40% by 2020. However with no scope for expanding hydropower (since the remaining rivers are protected under law) this seems to be an impossible target. An added complication is that earlier this year Vattenfall, the utiltiy company, has said that with low electricity prices and the nuclear output tax, their power reactors are operating at a loss. *Ref www.euronuclear.org*



The geothermal system in place at Stockholm's Central Station (above) captures body heat from over 250,000 daily commuters. The waste heat is used to heat water via a heat regulator and the heated water is then pumped into the nearby station terminal to provide heating. The cooling of the building is provided by water from the nearby Klara Lake.

SWEDEN: where people are happy to pay tax

LOCAL TAXES
Range from
28.89%
to
34.32%

NATIONAL INCOME TAXES
Range from
0%
up to SEK 413,200

20%
on SEK 413,201 to SEK 591,600

25%
over 591,600

INCOME FROM CAPITAL
30%
(state tax)

CORPORATE INCOME TAX
22%

CARBON TAX
€120
per tonne

source: www.sweden.se
(Note: 1 SEK=0.11 Euro)

CLIMATE POLICY AND LEGISLATION

Sweden's climate law dates back to 2002. The aim of the law was to lower GHG emissions by 4% during the first Kyoto commitment period, which went far beyond the Swedish allowance as part of the EU burden sharing agreement. It is worth noting that in 2002 the Swedish government set a long term target of reducing Sweden's per capita GHG emissions from 7.9 tonnes in 2003 to lower than 4.5 by 2050. To this day, the EU as whole has not yet established a target for 2050.

The climate law established two principles for its implementation. Firstly, the law requires integration of reduced climate impact across all policy areas from central agencies to local governments, businesses and individuals. In addition, the choice and implementation of policy measures must have regard to industrial competitiveness. But crucially the instruments include economic support to local climate investment programmes whereby communities, municipalities and companies can compete for grants towards mitigation measures including new technology. The main reason for the success of the Swedish climate policy is that the government has built a broad consensus around the need for 'carrots' (financial incentives and grants) and 'sticks' (taxes) and has invested heavily in new technology roll-out through businesses and local authorities. Renewables – mostly hydro and biofuels – now

"THE SWEDISH 2016 BUDGET STATEMENT ALLOCATED HALF A BILLION EURO FOR INFRASTRUCTURE, TECHNOLOGY, AND TAX REFORMS AIMED AT REDUCING GREENHOUSE GAS EMISSIONS."

make up a 52% share of Sweden's energy mix, in addition to its existing 10 nuclear power reactors which provide 40% of the country's electricity. The public transport sector has a target of becoming 90% fossil free by 2020 and is currently at 50%.

CARBON TAXES

Sweden's climate policy is most famous perhaps for its carbon tax introduced back in 1991. This tax is now set at €120 per tonne of CO_2 but as the tax goes up, reliefs are introduced to income taxes as part of what the Swedes call the 'green tax shift'. In 2010, energy and carbon taxes made up almost 5% of all tax revenue including income taxes and social contributions. There are many exemptions for industry but the crucial effect has been to shift district heating schemes away from fossil fuels and towards biomass (wood) fuels. The significantly higher rate of carbon tax in Sweden compared with other EU member states has not deterred investment, and in fact has fuelled financial support for green and innovative technologies such as biogas generation. The government has pursued fiscally activist policies by investing in innovative technologies to achieve environmental goals rather than leave the market to simply adjust to higher prices.

Sweden's GHG emissions are among the lowest in the EU and OECD, whether calculated per capita or as a proportion of GDP. In 2013, Swedish GHG emissions totalled 55.8 million tonnes of CO_2, compared with 71.8 million tonnes in 1990 – a 22 per cent reduction. Meanwhile, Sweden's GDP grew 58 per cent during this time period. Sweden has been embracing the renewable energy challenge it was set under the EU-RES policy and had already surpassed its 2020 target share of renewable energy by 2013. By 2013, over 10% of Sweden's transport sector was running on biofuel – which includes biogas from dozens of municipal sewage plants pumped directly to designated local filling stations.

Sweden does not shy from making ambitious goals and then setting about implementing the policies necessary to reach them.



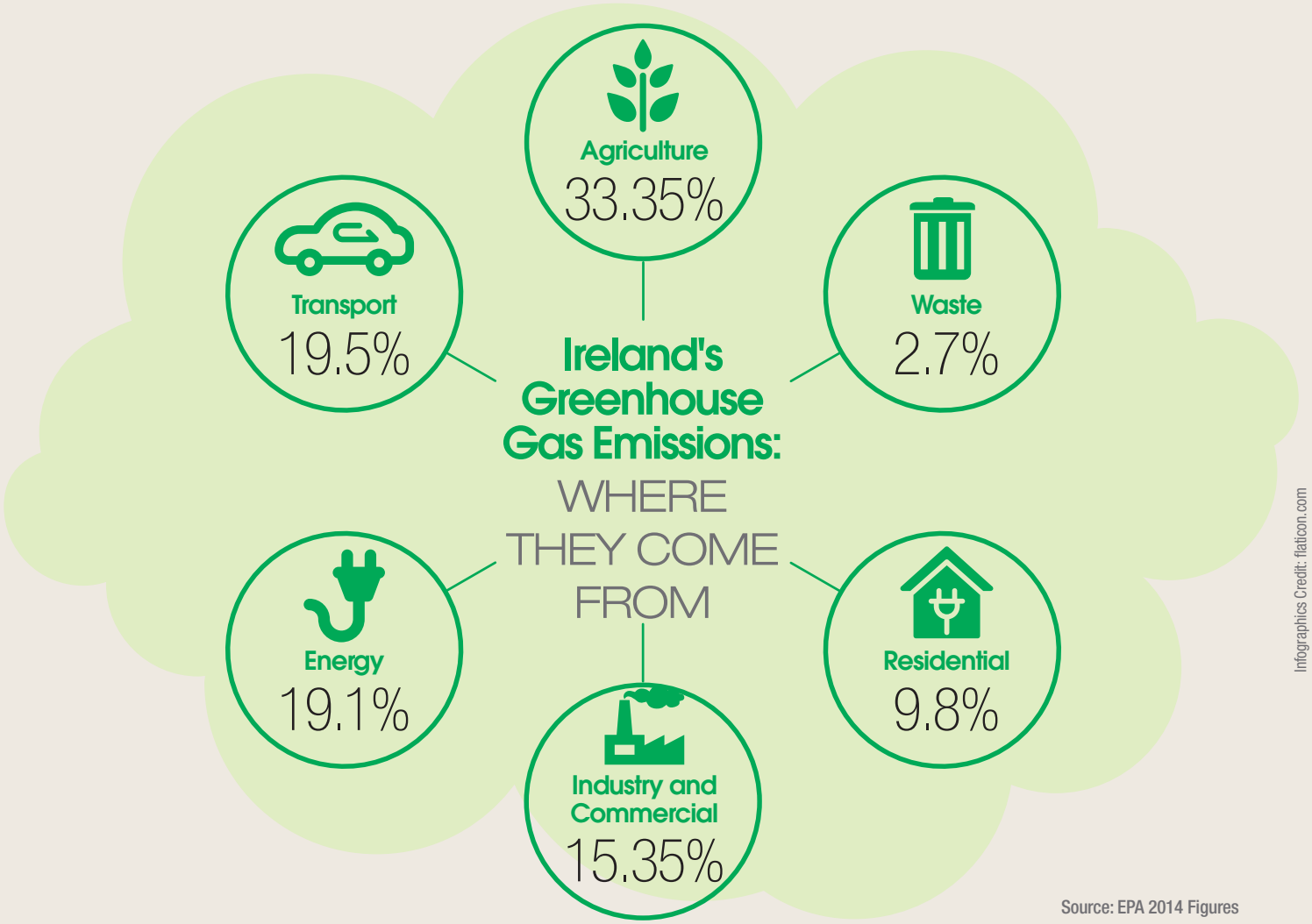
Credits: Johan Willner/imagebank.sweden.se

In Sweden allemansrätten *(lit. "the everyman's right")* is a freedom granted by the Constitution of Sweden. This gives a person the right to roam, to access, walk, cycle, ride, ski, and camp on any land—with the exception of private gardens, the immediate vicinity of a dwelling house and land under cultivation. Restrictions apply for nature reserves and other protected areas. It also gives the right to pick wild flowers, mushrooms and berries (provided one knows they are not legally protected), but not to hunt in any way. Swimming in any lake and putting an unpowered boat on any water is permitted unless explicitly forbidden. Visiting beaches and walking by a shoreline is permitted, providing it is not a part of a garden or within the immediate vicinity of a residence. To better protect access to water and the right to walk along beaches, it is since 1975 generally not permitted to build a new house near (generally 100 m) from a beach and/or shoreline.



In 2010 12% of all buses in Sweden were methane-biogas powered. Because diesel engines are not compatible with biogas, they are overhauling the bus fleets municipality by municipality, depending on local renewable targets. Some regions want to go 100% renewable (i.e. biogas) but that will include ethanol and natural gas combinations but at least they're cutting out diesel and lowering their NOx emissions too.

IRELAND'S emissions



Infographics Credit: flaticon.com

Source: EPA 2014 Figures

THE BIG 3 EMITTERS

1. AGRICULTURE

300,000
Planned Increase in the National Dairy Herd to 2020

14.5%
of all global emissions are from meat and dairy industries.

Ireland imports enough food for
1.4m
people more than it exports

Source: Dept. Of Agriculture, UN Food and Agriculture Organisation 2011

2. TRANSPORT

Transport Emissions have increased by
120%
from 1990 – 2014

124,945
New Cars Sold in 2015

433
of these were electric

Source:
EPA, SIMI

3. ENERGY

89%
of Ireland's Energy Needs are Imported

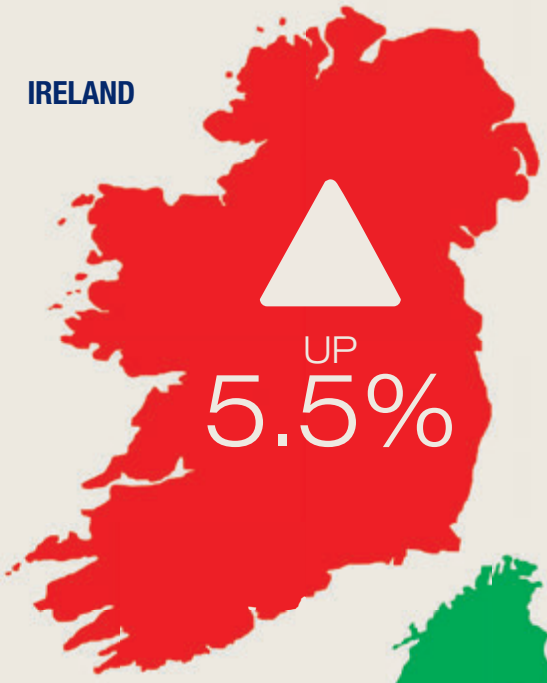
This costs us
€6.5
billion every year

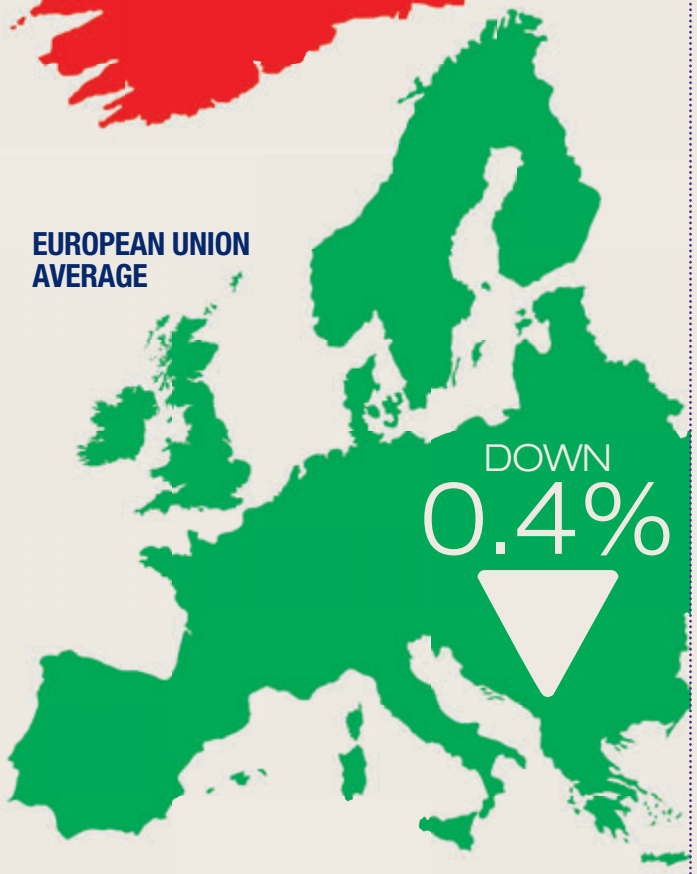
47%
of entire energy demand is oil.

Source:
An Taisce Green Schools

2015 vs 2014

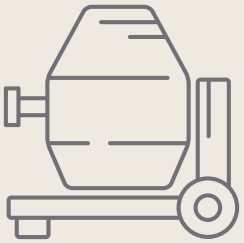
EMISSIONS FROM HEAVY INDUSTRY & POWER GENERATION SECTORS 2015*





***These are large facilities that are part of the EU Emissions Trading Scheme**

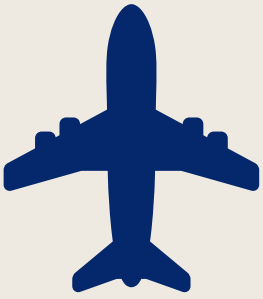
Source: 2015 EPA Figures



Cement industry emissions increased by **10.8%**

Power generation sector increased by **5.3%**





Aviation emissions increased by **11%**

Moneypoint Coal Generating Power Plant increased by **20%**





In order to play its part, Ireland needs to decarbonise its economy by **6.5%** every year starting now to avoid **1.5°** degrees of Global Warming as agreed at COP21 in Paris. If we do nothing until 2020, this becomes **10%** per year.

BY 2030
IT WILL BE TOO LATE

Source: Paul Price, Stocker 2012.



STOP THE SPRAWL

YEARS OF PLANNING MISMANAGEMENT, WHICH HAS ALLOWED THE POPULATION TO SPREAD FAR AND WIDE FROM CITY CENTRES, HAS MADE TACKLING CLIMATE CHANGE EVEN MORE DIFFICULT. IN THIS PIECE **IAN LUMLEY**, AN TAISCE'S HERITAGE OFFICER, DISCUSSES WHAT IS NEEDED FROM THE NATIONAL PLANNING FRAMEWORK TO HELP US REDUCE CARBON EMISSIONS.



AUTHOR
Ian Lumley

An Taisce actively uses its public interest role as a "Prescribed Body" consultee on Development Plans and individual applications to help reduce transport emissions. We argue for all new development to have walkable access to community services and mitigation with safe cycling and public transport routes.

The inadequate availability of public transport in Dublin and increasing congestion impedes the achievement of greenhouse gas emission reduction targets, as well as reducing competitiveness in the economy, states the European Commission's Country Report 2016.

Ireland is expected to miss its national emission reduction targets by 10%. This is largely attributable to an estimated 19% increase in transport emissions between 2013 and 2020, Renewable energy in transport was 5.2% in 2014 which is about half the 2020 target of 10% and air pollution remains a concern, with Ireland exceeding two of the four legally binding EU national emission ceilings for air pollutants.

Why are our transport emissions so much higher than in other European countries? This is easily explained by the dispersed pattern of settlement that we have encouraged with our spatial plans for the country.

THE NATIONAL SPATIAL STRATEGY

The outdated National Spatial Strategy 2002 was inexplicably silent on climate mitigation and adaptation, but if there is to be any hope of reducing carbon emissions this will have to be at the core of the eagerly awaited replacement National Planning Framework proposed for later this year. The effect of this new plan on transport patterns will be a key consideration.

The old strategy diluted the effectiveness of creating regional centers of critical mass by the politically populist but self-defeating designation of 17 towns as development centers on top of the 4 regional cities. The McCreevey decentralisation programme of 2003 further undermined this scattergun dispersal strategy. While the National Spatial Strategy contained a good overarching policy on sequential development and six community test requirements for new housing, including access to schools and public transport, these were effectively ignored by local authorities and in large part by An Bord Pleanála This is clearly shown by the level of car based commuter housing and out of town retail permitted such as "Liffey Valley" in Dublin and the continued deference to one-off rural housing.

The National Planning Framework simply cannot be an ineffective paper exercise like the National Spatial Strategy.

The Framework needs to be the focus for all sectors and levels of governance to engage in the actions needed to meet the needs of a climate stressed future, provide a framework for regional development, and above all create more resilient and less car-based and resource consuming communities.

It needs to provide an overarching land use and transport strategy with climate mitigation and adaptation and biodiversity protection at its core. Climate must permeate all aspects of the National Planning Framework with the reduction of transport and energy demand, including more energy efficient buildings. This leaves no place for further motorway investment or expansion of ports and airports.


©SkyPix Aerial Works - UAV Services skypix.ie

A taste of the consequences of climate change is already being experienced by some. Coastal erosion, which has destroyed a number of homes spread out along the Wexford coast, is predicted to increase.


©Hywel Williams

The railway line from Dublin to Wexford is very vulnerable now with coastal erosion affecting the line in Bray and Wicklow Town.



Rural roads, linking many very small settlements and isolated houses struggle to cope with modern conditions.

The effectiveness of the National Planning Framework in addressing internal land transport will be judged on its integration with the key objectives of Department of Transport Smarter Travel - A New Transport Policy for Ireland 2009-2020. This included targets to ensure that by 2020 the total kilometres travelled by the national car fleet would not exceed 2009 levels and workplace single car commuter travel reduced to 45%, with the parallel national cycling strategy having a 10% target for all journeys. This requires linking all new development to public transport access and safe cycling routes and curtailing car parking.

The overarching spatial objective for the National Planning Framework should be clear, namely to promote the development of the four regional cities as a counter magnet to the growth of Dublin. The capacity or potential of the planning system to deliver this is limited, so that integration required with all other areas of public policy and, including the targeting of IDA supported investment.

CONSOLIDATING CITY GROWTH

The strength and critical mass of Dublin in generating further growth must be recognised. Long distance commuting is undesirable on social grounds, in undermining the creation of integrated communities, on time consumption, and generation of congestion and emissions. This National Planning Framework needs clear policies to curtail further commuter housing from the Greater Dublin Area spreading into the surrounding counties. The issues raised in the March 2016 ESRI Report on housing supply constraint in the Dublin area have to be faced up to: it makes no sense to renew the pre-crash development of long distance commuter housing. A range of well-considered fiscal and market interventions including a Site Value Tax to constrain land hoarding, are needed in parallel with enhanced public transport investment including the DART interconnector. The same considerations in restricting sprawl and car-based development are required for the four regional cities, with Limerick and Galway currently presenting particular challenges.

The National Planning Framework will also need an effective rural development strategy for the country at large. This would be best achieved by policies to strengthen the status of towns and villages as the social, economic and development focus for their hinterlands, and recognise that scattering car based one off housing, is not in the interest of rural communities.

The effectiveness of the new statutorily based National Planning Framework will be dependent on general Government policy and spending, with legally enforceable climate proofing, spatial, planning and transport policy principles, and open to Judicial Review when breached. An Taisce will be playing an active role and promoting public engagement during the formulation and application of the NPF.



Limerick City has been designated as Ireland's Smarter Travel Demonstration City with €9.3m investment support. Despite this, the merged City and County Council is continuing to grant planning permissions for urban edge development with large surface car parks, undermining targets to switch to public transport and cycling, and reduce congestion.



10 ways to make Ireland's transport system more sustainable



AUTHOR
Enda Buckley, Sustainable Transport Policy Officer with the Irish Environmental Network

WITH IRELAND'S POPULATION MORE DISPERSED THAN OTHER EUROPEAN NATIONS THE CHALLENGE OF BUILDING A SUSTAINABLE TRANSPORT NETWORK IS GREAT. HERE **ENDA BUCKLEY**, DISCUSSES A NUMBER OF PRACTICAL WAYS THAT THE NEXT GOVERNMENT CAN IMPROVE OUR TRANSPORT INFRASTRUCTURE.

1 Develop a national sustainable rural transport policy

We have insufficient public transport for most rural parts of Ireland, in particular bus services. The ConSensus (Consumption, Environment and Sustainability) Project found that rural Ireland is particularly affected by gaps in public transport provision. Almost half of all rural respondents (44 per cent) reported that there is no public transport for their commute to work, school or college. When respondents were asked what would encourage people to reduce their car journeys, 53 per cent stated 'improved, more affordable public transport'. There is no purpose in forcing people from their cars if there are no viable alternatives available.



The national rail route requires integration, particularly a North/South rail link that would run a through service from Belfast - Swords - Airport - Liffey Junction - Heuston - Limerick - Cork.

2 Increase tax on diesel to match petrol

Under the polluter pays principle tax rates on diesel and petrol fuels should be taxed at a rate which is commensurate with the total environmental costs they incur. Currently, Irish diesel tax is still significantly lower than fuel tax on petrol with a typical difference of 13 cents/litre. This constitutes a distortive promotion of diesel engines which emit particularly harmful nitrous oxides (NO2). The tax on diesel needs to be increased by 10% to offset this. Testing conducted by the independent International Council on Clean Transportation (ICCT) found a typical modern Euro 6 diesel emits 7-10 times more nitrogen dioxides (NOx) on the road than the Euro 6 limit achieved in tests (80mg/km). All monies collected through this increase should be set aside into a sustainable transport fund.

3

ESTABLISH A GREEN BUS FUND to support cleaner technologies within public transport fleets. Last year Dublin Bus was refused funding to trial 3 hybrid buses. If Ireland is to reduce its CO2 emissions by 33 per cent from 2020 as required by the government's National Energy Efficiency Action Plan it will have to replace standard vehicles with hybrid alternatives.

4 Electric vehicles (EV's) need to be further incentivised through the use of free car parking spaces in all towns and cities. **The move is aimed at encouraging more drivers to switch to clean EVs, as just 175 new EVs were purchased in 2016 or 0.29% of all cars purchased (894 petrol/ electric vehicles were bought in 2016). Drivers who buy electric cars should be given some form of identification providing free access to public car parks, toll roads and use of bus lanes.**



Credit: All-electric-vehicles.com

Electrification is the optimum substitute technology for the future car fleet.

6 **Parking charges should be introduced for out of town retail outlets and other major traffic generation locations**, the revenue collected would be used to support Smarter Travel initiatives. Such a move would bring some much needed life and jobs back into town centres that have been decimated by the retail outlet model.

8 **Appoint a National Cycling Coordinator to the Department of Transport, Tourism & Sport (DoTTAS); ensure that the spend on cycling promotion is 10% of the total transport budget; implement the National Cycling Policy Framework (NCPF, 2009) to ensure that objectives/ actions are completed by its 2020 target date.**

5 Introduce a distance based charging system for heavy goods vehicles and reform the commercial vehicle tax regime.

The introduction of a distance based charge will encourage increased efficiencies in the haulage industry as commercial vehicle operators attempt to cut down on kilometres driven, resulting in aggregation of loads and reduced empty running. Charges can be set to favour vehicles with lower emissions, which could contribute to improved standards of vehicles in Ireland. A distance based system can also set different charges at different times of the day or week to reduce congestion or noise pollution. A road user charge will ensure that foreign hauliers, will lose the competitive advantage they currently enjoy as they do they not have to pay anything to access Irish roads (bar tolls).



We can reduce emissions by helping children walk to school instead of driving if people choose to live in walkable towns and villages that have the critical mass of population to support local schools.

7 Integrate the national rail route

The national rail route requires integration, particularly a North/South rail link that would run a through service from Belfast - Swords - Airport - Liffey Junction - Islandbridge/ Heuston - Limerick - Cork. This route would have the effect of integrating transport across Dublin and Ireland. Provision of such a service would also encourage people to travel by rail and would have massive tourism benefits.

9 **Ensure that all schools are tasked with devising 'Travel Plans'.** Measures to encourage walking and cycling to school are important because sustainable patterns of travel behaviour are often carried into adult lives and play an integral role in formative experiences.

10 **INCENTIVISE ELECTRIC VEHICLES (EVS) WITHIN THE TAXI FLEET BY APPLYING A DISCOUNT TO THE TAXI LICENCE FEE. A national target should be issued that 20% of taxis are to drive EVs by 2020. To incentivise this target, a 20% reduction in the taxi licence fee should be implemented in the years up to 2020 for taxis that drive electric vehicles.**



Putting the wheels in motion

WITH A NEAR NEGLIGIBLE FRACTION OF THE TRANSPORT BUDGET BEING EARMARKED FOR REDUCED CARBON TRAVEL IT IS CLEAR THE GOVERNMENT DON'T GIVE A DAMN ABOUT REDUCING EMISSIONS FROM TRANSPORT. **DR DAMIEN Ó'TUAMA** WRITES THAT WE NEED MORE THAN EVER TO RE-ESTABLISH A STRONG CYCLING CULTURE.



AUTHOR
Dr Damien Ó'Tuama

The bicycle still gets the hind tit when it comes to transport investment – and this despite the endless government rhetoric around healthy lifestyles, active travel and low emission vehicles.

Out of the near €10,000 million ear-marked for transport investment over the next six years as per the government's plan *Building on Recovery: Infrastructure and Capital Investment 2016-2021* (published in Sept 2015), just €100 million is committed to "smarter travel and carbon reduction measures including Greenways". This means that cycling gets approx ½ of 1% of the transport pie.

What follows on here is that the *National Cycle Policy Framework* (2009) – the overarching blueprint setting out how to re-establish a strong cycling culture in Ireland – has pretty much no chance of being implemented in a serious way and the national target of '10% of all trips to be taken by bike by 2020' will not be reached. Very depressing indeed. There is no political will to challenge the hegemony of automobility. There is no acknowledgement that switching from fossil energy fuelled to electric cars makes zero impact on congestion and road safety, and (at best) minimal impact on carbon emissions.

In response to these miserable commitments to investing in bicycle transport as per the above *Capital Investment* plan, An Taisce, collaborating closely with Cyclist.ie – the Irish Cycling Advocacy Network has worked hard to put cycling on the political agenda in the run up to General Election 2016. Our overarching aim is that at least 10% of transport spend goes on cycling and is used to steadily implement the *National Cycle Policy Framework* (NCPF). The bicycle needs to be recognised as the low emission vehicle to be prioritised, particularly for journeys under 5km.

We are now campaigning for a National



An Taisce, collaborating closely with Cyclist.ie - the Irish Cycling Advocacy Network - is campaigning for at least 10% of the transport budget to go on cycling and used to implement the *National Cycle Policy Framework* (NCPF).

Norway has pledged to combat climate change, to cut its overall transport emissions in half and become fully carbon neutral by 2050. Now they plan to back this up with several projects and initiatives, including a seriously massive bike highway system. The government plans to spend the equivalent of €1 billion on 10 two-lane, cross country bike highways across its cities. Cyclists will be able to travel at speeds up to 40 km per hour from inner cities all the way out to the suburbs. Authorities want 10 to 20 percent of all journeys to be made by bike by 2030.



Paul Corcoran











Cycling Officer to be appointed to the Department of Transport – ideally, of course, within a massively strengthened and properly funded Smarter Travel Unit. Such an officer would drive and coordinate the implementation of the 100+ policy measures in the NCPF – and communicate regularly with his or her counterparts in European states that are much more serious about normalising transportation cycling. Amongst the priority issues we want to see advanced are: making 30km/h the default speed limit in built-up and urban areas and introducing a legally enforced 1.5m gap for overtaking cyclists. This latter issue is being driven by the fabulous *Stayin' Alive at 1.5* campaign, spear-headed by Phil Skelton based in Wexford – see safecyclingireland.org.

PUBLIC SPACE IS DOMINATED BY INCREASINGLY LARGE METAL BOXES

Policy interventions to address the speeds and overtaking distances of motor vehicles are all the more important given that 24% of all new imported vehicles are 'SUV ' (Sports Utility Vehicle) / 4X4 body types. Broadly this means there are now more motor vehicles on Irish roads with greater masses (often well over 2000 kilograms), wider bodies and higher front ends (and hence lower 'EuroNCAP' safety ratings for pedestrian impacts) thus creating a more intimidating environment on Irish roads for those without a metal shell surrounding them.

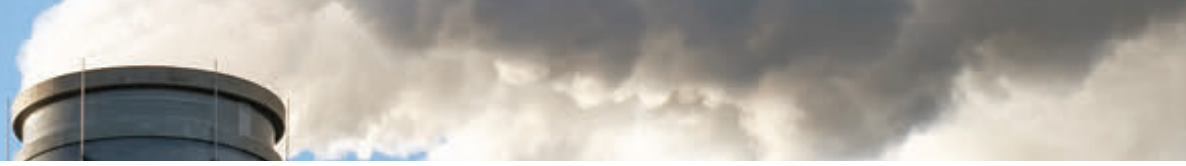
A further problem created by large SUV's in an urban context is that their wider body types (and large mirrors) extend beyond the width of standard on-street (parallel) car parking spaces thus squeezing the cyclist further on already congested roads.

The broad argument here is that if we are serious about recreating strong everyday cycling cultures in Irish towns and cities, we need to address the elephant in the room – the incredible dominance of public space by countless increasingly large metal boxes, both moving and parked. While the debates still rage amongst cycle campaigners around the most appropriate mix of policy interventions to use when seeking to civilise urban streets (segregated tracks, cycle lanes, low speed zones, improved driving standards, improved cycling skills etc.), one distinct advantage of building wide segregated cycle facilities on key routes is that car parking spaces and/or road space for moving cars are removed thus disincentivising car travel.

In conclusion, cycling advocates and campaigners within Cyclist.ie and An Taisce will need to raise their game over the coming years if everyday cycling is to make a serious return outside of some pockets of some Irish cities and (often isolated) greenways – and hence help the transport sector in beginning to decarbonise.

As a final point, I wish to pay a special personal thanks to Dr. Mike McKillen who has recently stepped down as Chairperson of Cyclist.ie having been at the helm (or handlebars!) since 2008 – and indeed having been campaigning for cyclists' rights since the 1970's. More than anyone else in Ireland, Mike has been an amazing advocate for everyday cycling and an unflinching leader in regard to reminding us of the wider CO2 and fossil energy dimensions to our cycling advocacy work and the need to decarbonise our transport system! I also wish the newly elected Cyclist.ie Chairperson - Colm Ryder, another An Taisce member - the very best!

Dr. Damien Ó Tuama is the National Cycling Coordinator of An Taisce (and Cyclist.ie – the Irish Cycling Advocacy Network). He is based in Tailors' Hall. Contact: damien.otuama@antaisce.org



More Green HOMES Less Greenhouse Gases

IF CHARITY STARTS AT HOME THEN SO DOES SAVING THE PLANET. OUR HOMES AND THE APPLIANCES WE USE ALL HAVE A BIG IMPACT ON ENERGY CONSUMPTION, BY **MICHAEL JOHN O'MAHONY**, ENVIRONMENTAL EDUCATION UNIT.

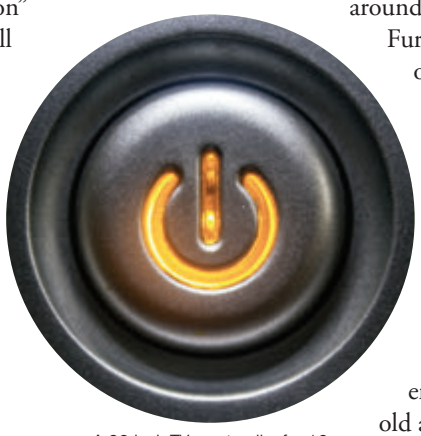


AUTHOR
Michael John O'Mahony



Scoil Phadraig Naofa, Athy were awarded their Green Home Flag in 2015. For the transport theme - pupils in 3rd class illustrate the number of kids in their class that walk to school

Around 15 years ago when I was very involved in Green-Schools teacher training seminars I would often use an example of how we use or more to the point, waste energy. I had once heard that the typical output from one "average size power station" was being used to just keep all our televisions across Europe on standby. I thought to myself this sounds a bit unbelievable. Unfortunately, as is often the case the fact is stranger than the fiction. So let's do the sums. A typical television on standby can use around 10 Watts of power. There are over 200 million households in the EU, most of which own at least one TV. If only 10% of these households left their televisions on standby that is a staggering usage of around 200MW of power on TV standby alone. To put this in context the Ardnacrusha Hydroelectric Station, (Ireland's first power station), has a maximum capacity of around 85 MW! This is just the standby on our televisions across Europe; think of all the other appliances, some of which have only appeared in the last 15 years (e.g. smart phones, tablets, set top boxes, etc.). One can play around with the numbers but the facts are we have a lot, possibly Giga-Watts, (that's a billion watts) of "unnecessary usage" around electrical appliance standby. Furthermore, this proportion of our individual greenhouse gas footprint is steadily increasing, as more appliances become part of our daily lives.



A 32 inch TV on standby for 16 hours a day it will cost you 68c per month or €8.22 per year. Desktop computer with 17 inch screen will cost around €16.32 a year.

This scale of "unnecessary usage" can however be reversed and put into the context of behaviour change based energy conservation. As the old adage goes "Charity starts at Home" and one could also say that energy conservation starts at home. For the last 10 years the Environmental Education Unit has been developing and delivering the Green Home Programme. The programme was initially developed under the National Waste Prevention Programme (NWPP) with the Environmental Protection Agency (EPA). The Green Home Programme (www.greenhome.ie) works by offering advice

and support to homeowners on how to improve their environmental behaviour and decrease their environmental footprint with regard to four main environmental themes: waste, water, energy and transport. To date around 30,000 households have engaged with the programme through various hubs and mentorship points. These hubs include Education Unit Networks such as the Green-Schools, Green Communities, National Spring Clean and other networks such as Tidy Towns. In fact, the Tidy Towns Competition recognises Green-Home as a preferred action under the category of "Sustainable Waste & Resource Management" and to date over 250 Tidy Towns Groups have engaged with the programme and promoted it in their local communities. However, the overall target of the Green Home programme is to have the capacity to be able to engage with all 1.5 million households in Ireland.

Participants that engage with the Green Home programme undertake a baseline survey that highlights areas they are already doing well in and also areas where improvements can be made. From this they can develop and undertake a bespoke set of actions that will decrease impact. They can then re-take the survey and measure their performance. While Green Home very much focuses on behaviour change, the website also contains a wide range of information of grants and useful links. (www.greenhome.ie)

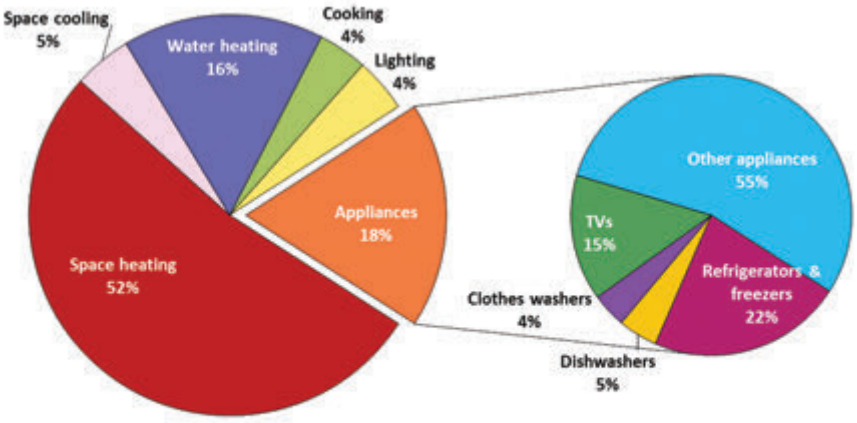
The advent of social media over the last 10 years has been a great way of promoting and developing the programme and platforms such as Facebook and Twitter are excellent for this purpose. YouTube also has great potential for promoting and developing the programme.

It has been demonstrated that households that fully implement the programme save on average €350 per annum on their waste, energy, water and transport costs with some participating households indicating that they saved around €1,000! This is achieved by an overall increase in positive environmental behaviour and household sustainability of around 10-20%. At a thematic level the changes of behaviour are waste (+6%), energy (+10%), water (+18%) and transport (+9%). In a recent Green-Home energy challenge and electricity awareness project a number of participating households were given the use of wireless electricity monitors to install in their homes for a period of approx. 1 week. This enabled them to be able to understand their actual domestic electricity usage and also how much energy certain appliances were using. The ultimate aim of this project was to encourage positive behaviour change in terms of electricity usage simply by creating an awareness of actual usage. The results were really impressive with participating households reducing their electricity costs by around €250 per annum. When all of these individual household reductions are added together it is obvious that a programme like Green Home can have a significant impact in reducing Green House Gas Emissions.



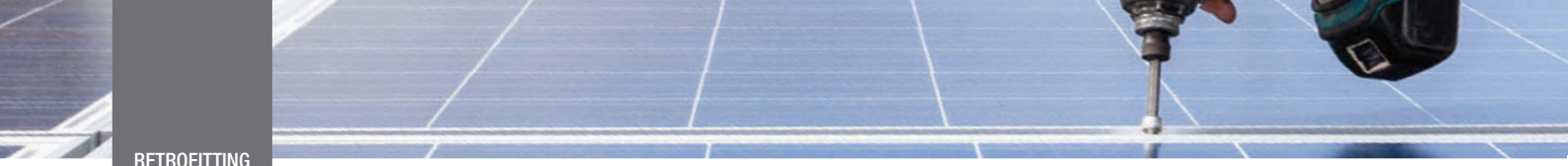
In 2014 the Rose of Tralee Festival incorporated the Green Home Programme. Everyone involved, including these two Roses, took part in the surveys.

"WIRELESS ELECTRICITY MONITORS CAN BE INSTALLED IN HOMES TO HELP HOUSEHOLDERS UNDERSTAND THEIR ELECTRICITY USAGE AND HOW MUCH ENERGY APPLIANCES ARE USING."



Breakdown of OECD energy consumption in the residential sector (2011)

Source: IEA energy efficiency indicators database 2014



Retrofitting MADE EASY

ONE OF THE MAIN BARRIERS TO ENERGY EFFICIENCY AT HOME IS THE DIFFICULTY IN ARRANGING THE WORK. DEALING WITH MULTIPLE CONTRACTORS ON DIFFERENT ELEMENTS OF THE JOB CAN BE A REAL HASSLE. IN THIS ARTICLE **CHARLES STANLEY-SMITH** EXPLAINS HOW A PILOT PROJECT IN TIPPERARY HAS MADE RETROFITTING AS EASY AS POSSIBLE FOR THE HOMEOWNER.



AUTHOR
Charles Stanley Smith

The need to retrofit my house nagged at me for many years. In terms of Climate Change and Energy Security, I not only understood the need but was actively campaigning for decent Retrofitting programmes. Every so often I would google retrofitting, grants, insulation, BER and disappear into the world of google without achieving anything.

We built our house in 1993 and there was insulation in the attic and the walls – but ridiculously little. I knew that more insulation and pumping the walls was necessary. However, was it worth getting external insulation? If I got thermal solar panels, how many will I need? There is interesting stuff happening with Photovoltaic (PV) panels but how do I heat the water? Questions, questions. I talked to companies offering solutions but sometimes they seemed to know less than I. Then out came the long finger for another while.

Would it not be wonderful if a trusted agency came to me with a complete package tailored to our needs? Then I was directed to an announcement for the 2015 Super Homes Pilot Project.

Knowing the calibre of the Tipperary Energy Agency, I applied immediately.

Soon, Paul Kenny the Director of Tipperary Energy Agency was round to discuss the project with myself and my wife. He brought along their documentation on the project and 'Homeowner Frequently Asked Questions'.

He explained the various technologies, yes PV panels and a heat pump to heat the house and hot water was the way to go. Geothermal was good if you were doing a new build but did we want to dig up half our garden for not a huge benefit over a plain air/water heat pump. We would need to change the existing radiators to aluminium as heat pumps work at a lower temperature and you need the better heat exchange provided by aluminium. Air tightness was a major source of improvement, a couple of fireplaces would be decommissioned. Advanced air extraction/circulation would be good for general wellbeing and assuage our doubts about fresh air. Though in a retrofit, unlike a new build, it would probably be too difficult to extract the heat out of the extracted air.

Tipperary Energy Agency would source and

TIPPERARY energy AGENCY

There are now 13 Energy Agencies in Ireland. The first - Tipperary Energy Agency - has been supporting Tipperary to reduce its energy demand for 17 years and has enabled many people, communities and the public sector to become more sustainable in their energy use. Pioneering projects undertaken include Ireland's only community operated wind farm in Templederry, Ireland's first eco village in Cloughjordan, a massive photovoltaic project across 9 public buildings and a major housing retrofit scheme. The County's adoption of biomass has resulted in €1.1M being spent on local fuel versus €2.5M of imported oil.

handle all available/suitable grants. He put us in touch with AIB in Cashel. The Agency had explained the programme to them, so that if we were interested in a loan, we would not have to.

We were going to be willing guinea pigs. The discussion ended with a list of requirements:

- Pump all the walls
- Add feet of insulation to the attic
- Make the house air tight – decommission a couple of fireplaces
- Install ventilation system - at low and continuous level
- Decommission the oil burner
- Install PV panels and a heat pump
- Install larger better insulated hot water cylinder.
- Replace existing radiators with equivalent aluminium – no changes to the plumbing.

Meanwhile, Tipperary Energy Agency had been researching potential suppliers and contractors for the project. Paul brought three of these potential contractors around the house and returned a couple of weeks later with quotations. We discussed them with Paul and made our choice. Soon we had draft contracts, which were signed. Tipperary Energy Agency were piloting the programme on a number of houses and the programme needed to be complete by the end of November so they co-ordinated the starts and even took into account the fact that we were going away for a week's holiday.

On the first morning at least 12 workers in co-ordinated teams turned up and within 7 working days, allowing for our holiday, the work was substantially complete. Within another week, a few snags were identified and sorted and the heat pump 'tuned'. We connected both the Heat Pump and PV inverter to the internet. So I now have phone apps to control them both. My wife and I are 'old school' we are quite happy with a warm house, between 17°C and 20°C and reach for a jumper before turning the thermostat up. Though the house is now 'air-tight' the continuous low level ventilation means it is very 'airy' and far from stuffy.

I have gone through my energy bills for the last five years and have been tracking my energy usage since the system went live. I have now had two winter months to base my estimates on and prior to the retrofit, the heating was not turned on for 6 months of the year.

Based on my current usage, I expect to save at least €2,000 per year and cut my heating/hot water bills by 75%. It is currently costing



Photovoltaic panels similar to these were fitted to my house. During the winter PV has provided 75% of the hot water. In March there was a week in which the PV provided all the hot water and it is possible that in the long summer days the PV will supply all the heating and hot water. Based on my current usage, I expect to save at least €2,000 per year and cut my heating/hot water bills by 75%.



€3.30 a day to heat the house and €0.70c to heat the hot water. We are looking at a return in investment of around 9 years.

So far, the PV has provided 75% of the hot water, but that is during the short days of December and January, but already in March there was a week in which the PV provided all the hot water. Now with longer days and less requirement for heating, when will we get to the point that the PV is supplying all the heating and hot water and contributing to the cost of cooking & clothes washing? This will also give us a shorter return on investment.

Happy? Very – Retrofitting is an imperative in terms of Climate Change, Energy Security and providing jobs. It's too difficult to organise yourself, so it is not happening. The country needs a one stop shop like that provided by the Tipperary Energy Agency – Retrofitting without any hassle.

P.S. Keep an eye on www.tea.ie they hope to run another pilot this year.



Super Homes Pilot Project

The Super Homes Pilot Project aims to deliver a deep retrofit for homes funded with a repayable loan and significant capital discounts. The project aims to move away from shallow retrofit and test applications of whole house retrofit focusing on cost effective solutions. The project aims to lower energy bills by a massive 50% – 70%.

The Super Homes Pilot Project is run by Tipperary Energy Agency and North Tipperary Leader Partnership , is supported by AIB and Electric Ireland and part funded by SEAI who contribute one third of the cost of the project under their better energy financing programme.



BOG KEEPING IT IN THE



AUTHOR
Alannah Ní Cheallaigh - Mhuirí

IRELAND'S PEATLANDS ARE AN EMISSIONS NIGHTMARE. DRAINED BOGS ARE CONTRIBUTING SUBSTANTIALLY TO OUR CARBON EMISSIONS BUT THIS COULD CHANGE IF WE WORK TO RE-WET, RESTORE, AND PROTECT WHAT LITTLE WE HAVE LEFT, WRITES **ALANNAH NÍ CHEALLAIGH - MHUIRÍ**.

There is now a strong body of evidence from the EPA and others, which shows that healthy bogs remove Carbon Dioxide from the atmosphere and trap it as Carbon in the anaerobic, water-soaked peat. As healthy, 'active' bogs store more Greenhouse Gases than they emit, they act as a Carbon Sinks, having an overall cooling effect which could help counteract rising global temperatures. It seems likely that in future peatlands may play a significant role in carbon accounting, that is - countries could be rewarded for the Carbon annually being stored in their peatlands, but for now they remain the invisible emissions sector.

Ireland has the third highest proportional cover of peatland in the world. This should give us a great opportunity to contribute to removing carbon dioxide from the atmosphere while we go about eliminating our ongoing emissions. If Ireland's peatlands were near-intact they might actively store 57,400 tonnes of Carbon per year over the whole country! To imagine this, it

Girley Bog is owned by the Irish Peatland Conservation Council. Following a debate on the future of Irish bogs organised by An Taisce the IPCC began in 1982 as the National Peatland Conservation Committee led by Prof Gerry Doyle. 3 years later this became the Irish Peatland Conservation Council (IPCC) and by August 1986, Dr. Lockhart had established IPCC as a charitable organisation and a company limited by guarantee. Dr Peter Foss took up the role of Chairman of the IPCC late in 1986 and under his leadership, the IPCC has grown into an independently funded conservation organisation engaged in lobbying, education, fundraising and purchasing sites.

"THERE IS NOW SUBSTANTIAL EVIDENCE THAT REWETTING DRAINED BOGS PREVENTS FURTHER LEAKAGE AND IN TIME CAN RETURN TO PROVIDING AN IMPORTANT SINK FOR CO_2,"

might help to visualise that 1 tonne is the mass of the heaviest polar bear ever recorded.

Disastrously, drainage for the purposes of peat extraction, agriculture and commercial forestry is taking a huge toll on the health of Irish bogs. The BOGLAND Research Project, 2011, found that less than 1% of our raised bogs can actively store carbon. Draining bogs, or the land nearby, lowers the water table and exposes the peat to the air. This allows the carbon that has been stored over thousands of years to be oxidised to CO_2 and leak silently and invisibly out into the atmosphere. Under our noses our natural carbon sinks have become a carbon source, because they are emitting more CO_2 than they can take in. In 2011 it was estimated that Irish peatlands emit ~2.64 million tonnes of carbon per year .

Ireland's commitment to the Paris Agreement recognises the urgent need to reduce our emissions to mitigate dangerous climate change. However, it can be difficult for people to know what they can do in the face of a challenge on this scale. The good news is that there is now substantial evidence that rewetting drained bogs prevents further leakage and in time can return to providing an important sink for CO_2, the main Greenhouse Gas causing climate change.

It is undeniable that communities around Ireland have important historical and cultural relationships with the bogs. Therefore communities deserve to be at the forefront in the evolution of bog management in Ireland, for the benefit of people and planet.

AN TAISCE'S NATURAL ENVIRONMENT OFFICE UNDERTAKE A PRACTICAL RESTORATION PROJECT

An Taisce have successfully applied for a small grant through Patagonia's Environmental Grants Scheme to carry out a community action day to restore part of Girley Bog in County Meath, which is 8km from my family home. The Irish Peatland Conservation Council (IPCC) who own the site at Girley Bog have given permission to carry out the project there and have been of great support with invaluable experience of practical restoration.

Receipt of the funding will enable a group of predominantly-local volunteers to block a number of large drains in the remaining area of degraded cutaway. The aim is to help restore the high water table natural to Girley Bog; to prevent further CO_2 emissions from the area and encourage the bog to become an active carbon sink again. We will document the experience by filming the action day with the help of media students.

My hope is that working together on this project will engage people in a positive experience of climate mitigation and habitat protection in their own local area. By Keeping it in the Bog in Girley, we may catalyse a shift in public understanding of peatlands and demonstrate practical action for mitigating climate change to other communities.

patagonia

Patagonia funds only environmental work. We are most interested in making grants to organisations that identify and work on the root causes of problems and that approach issues with a commitment to long-term change. Because we believe that the most direct path to real change is through building grassroots momentum, our funding focuses on organisations that create a strong base of citizen support.



Credit: Reproduced with permission ot Dept. of Arts, Heritage and Gaeltacht

The National Parks and Wildlife Service is seriously understaffed and overworked for the immense task of protecting a healthy environment. Despite this, they do some great work. Here you see a NPWS conservation work camp managing part of the Slieve Bloom Mountains Nature Reserve including removing invasive conifers, unblocking ditches and creating a pool.



Is what's on your plate killing the planet?

THE FOOD WE EAT IS HAVING A SUBSTANTIAL EFFECT ON CARBON EMISSIONS. IN A WORLD WHERE WE NEED TO SUBSTANTIALLY REDUCE OUR EMISSIONS AND FEED A GROWING POPULATION HOW CAN WE CONTINUE TO JUSTIFY MEAT PRODUCTION WHICH IS HIGH IN EMISSIONS AND USES HUGE SWATHES OF LAND? IN THIS PIECE **LISA ASHTON** EXPLORES THE NEED TO CURB THE CONSUMPTION OF MEAT AND DAIRY.



AUTHOR
Lisa Ashton

Reducing greenhouse gas (GHG) emissions is often viewed as a daunting task that needs to be led by governments and big businesses to make a significant difference. However, this is not the case. Making meaningful contributions in reducing GHG emissions is in reach of the general public: by simply informing oneself and making ethical consumer choices we can all reduce our environmental footprint. One example of this is the role that Irish consumers play in the global meat and dairy industry.

Globally, livestock emissions account for 14.5% of anthropogenic GHG emissions, and more than two thirds of these emissions come from cattle. Livestock emissions are growing mainly due to emerging countries with mass populations, such as China, adopting western diets with high meat and dairy consumption and developed countries, such as Ireland, continuing to over consume these products.



There is the potential to produce biogas from food and agricultural waste however run off from slurry pits and heavily fertilised grass fields currently too often ends up in our waterways.

HOW MUCH MEAT DO WE NEED FOR A HEALTHY DIET?

The International Food Policy Research Institute finds in 2012 that to sustain a healthy diet, the maximum recommendation of meat is 70 grams per day or 30 kilograms (kg) per person annually. However, European and North American consumption averages more than 83 kg per person annually. East Asian consumption is currently 28 kg per person annually and is projected to jump to 52 kg by the year 2050. The powerful undertaking of shifting diets away from livestock products towards plant-based proteins can make positive strides in reducing GHG emissions and improving human and environmental health.

Beef and dairy production are aggressively overusing natural resources, and also largely contributing to climate change. The Food and Agriculture Organization of the United Nations emphasizes in the report Livestock's Long Shadow that the carbon footprint of a high meat diet is twice as high as a vegetarian diet. In addition to these high emissions, in 2012 the intelligence agency Mintel highlights that, "Nearly 60% of the world's agricultural land is used for beef production, yet beef accounts for less than 2% of the calories that are consumed throughout the world". Therefore, the resource intensity and GHG emissions that comes with meat and dairy production are not worth the calories they produce, as more people can be fed on a mainly plant-based diet with less demand from natural resources.

CLIMATE CHANGE WILL INTENSIFY THE PROBLEMS IN COUNTRIES WHERE FOOD SECURITY IS ALREADY AN ISSUE

Climate change and food security are strongly correlated. Feeding the high-end meat-eating market results in high GHG emissions, which disproportionately impacts agricultural production in countries where resilience to



Global food companies, Cargill, Tyson and Yara have a bigger climate footprint than the Netherlands, Vietnam or Colombia, according to new analysis by UK NGO Global Justice Now in December 2015.



Credit: Peter Sweetman

climate change effects is low. This can result in pushing adequate nutrition out of reach for those facing food insecurity and undermine their ability to sustain local production.

A dietary shift away from meat and dairy products is a positive solution to reduce emissions and increase food security. One third of all calories produced are used as animal feed: meat and dairy products use up nutrition and land that could be used more effectively for direct human consumption. Reducing the amount of cattle in the human food chain would create more available energy (i.e. calories) from the same area of land to run a human's metabolic processes directly instead of losing energy to feed the cattle that will later feed a human. Increasing public awareness of how our consumption patterns influence the food supply chain is vitally important in addressing emission reductions. We can make a difference in reducing emissions and aiding in improving food systems to be able to sustainably feed more people by consciously choosing to shift our demand away from resource intensive and high emission embodied products.

If the dietary shift and the policies to support it do not emerge, William J. Ripple and others warned (in Nature Climate Change, 2013) that meat production will continue to grow rapidly worldwide. Without change, Ripple estimates that meat production will double from 2000 to 2050. If the livestock sector continues to grow and be exempt from climate change policy and action, the repercussions are going to be felt globally through climate change and natural resource depletion, furthering the crisis of food insecurity and biodiversity loss. However, if we act by shifting our diets it would help to achieve significant progress in reducing crop price influxes, reduce water pollution, biodiversity loss and increasing the number of people fed on the same area of land.



A dietary shift away from meat and dairy products would help to achieve significant progress in reducing carbon emissions, crop price influxes, water pollution, biodiversity loss and increasing the number of people that can be fed on the same area of land.

BUT ISN'T IRISH FARMING MORE EFFICIENT THAN MANY OTHER COUNTRIES?

The Irish agricultural sector advertise themselves as a model of sustainability, which could lead us to believe that there is no climate change cost to our beef and dairy intensive diet and industry. However, at a time when we need to rapidly decrease our emissions across the board to prevent runaway climate change, not only are there no total-emissions reductions planned in Irish agricultural policy, but emissions are projected to increase by 7% or 6% (in the period 2014 to 2020). Despite improving efficiency, increasing cattle numbers and fertiliser use will only increase the carbon emissions of Irish agriculture and unfortunately for the cattle bubble, total emissions are what count when it comes to climate change.

An Taisce joins 100 European Environmental and Social NGOs in calling for a major review of the Common Agricultural Policy

Despite claims that European and Irish agriculture is greener than ever, we continue to see staggering collapses in biodiversity. One third of Ireland's wild bees are threatened with extinction. Wild birds such as the Lapwing and Redshank have declined by 88% in the last three decades and may follow the Corn Bunting towards national extinction. (The Corn Bunting is already extinct as a breeding species in Ireland). We have lost half of our cleanest rivers and lakes and the ongoing intensification of agriculture is one of the biggest challenges we face to improve water quality.

In a letter to the President the activists state "We strongly believe that only a serious Fitness Check of the CAP will ensure that such a policy delivers real benefits to EU citizens, farmers, our environment, our animals, our health and climate"

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