



# Green Centre News

Volume 5, Issue 2

April 2012

## Latest News

- IoM FoE plans 'Family Fun Cycle Day' on 20th May – starting at 11am at the Sea Terminal.
- Further consultations have been held on establishing offshore wind facilities in or near our waters.
- The Bee Cause campaign kicks off, locally and in the UK, drawing attention to the plight of British bees

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## Is Black Silicon the Answer to all our Prayers? *By George Fincher*

Photovoltaic (PV) panels, often referred to as solar panels, are the dark blue coloured panels typically mounted on a south facing house roof and used to convert sunlight into electricity.

Have you ever wondered why most silicon PV panels are a dark blue colour? Well, it's all down to the amount of light being reflected back off the PV panel surface. A typical modern PV panel, treated with an anti-reflective coating as part of its manufacture, will reflect about 6% of the incident light back from its surface. This gives it the distinctive dark blue colour. If the amount of light being reflected from the PV surface can be reduced then the surface colour will move from the dark blue towards black. When there is no reflected light (i.e. all incident light is absorbed), the PV surface will appear black.

As more light is absorbed by the PV cell, then more light is available to be converted to electrical energy, so the PV panel can become more efficient. This means that you get more electrical output for your money, helping to reach the point where PV generated power becomes cost competitive with grid-supplied power.

If PV generated power is the same price as grid-supplied power (this is referred to as 'grid parity') then it is no longer necessary to have government subsidies to encourage homeowners to install PV on their roof. Furthermore, if PV becomes cheaper than grid-supplied power, then homeowners will want to install PV just to save money. So what else could help PV reach the magic grid parity level?

Present day solar panels are manufactured using semiconductor techniques. The manufacturers need extremely expensive fab's (semiconductor fabrication facilities) that are capable of keeping the 'clean rooms' where the PV silicon is formed, to an extremely high level of cleanliness. A human hair or small spec of contamination on the surface of a semiconductor renders it totally useless due to it not functioning correctly.

On a computer chip, for instance, a human hair could obliterate more than 5000 transistors. The method of producing the PV silicon is also energy intensive, and uses expensive equipment for processes such as chemical vapour deposition, plasma enhanced chemical vapour deposition, etc.

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## Some No-Cost Ways to Save Energy *by Cat Turner, borrowing liberally from MEAC*

MEAC offers a great flyer entitled 'Energy Saving Tips', aimed at saving on energy bills (and in the process cutting down on your household's carbon footprint.).

If you haven't seen it, drop the Green Centre team an email ([greencentre@manx.net](mailto:greencentre@manx.net)) or scoot by in person and ask for a look at a copy.

Failing that, in the spirit of recycling, we've reproduced a few here as a starting point.

Some are common sense - others made me, at least, think!

- Turn off lights when leaving a room for a long period.
- Don't leave outside lights on in the daytime
- Unplug phone chargers

when they're not in use (also adapters attached to electrical appliances)

- Turn off TV/video and hi-fi at the wall, NOT via Standby. That blinking red eye eats up around 50% of the energy it uses when turned on.
- Defrost fridge and freezer regularly. If they tend to frost up, check the door seal.
- Try not to put your fridge next to a cooker or boiler, and if you must, leave a good gap between them.
- Keep the condenser coils at the back clean and clear of the wall.

- Cleaning off the fluff that gathers on the back of your fridge helps it run efficiently.
- Don't leave the fridge door open for longer than necessary.
- Let warm food cool down before placing it in the fridge, or more energy will be needed to cool the fridge.
- Defrost food overnight in the fridge. The cooler temperature of the frozen food lets the fridge save energy!

Easy, eh? Now to tackle that fridge-fluff...eugh!

## It Ain't Necessarily So! *By Muriel Garland*

On the face of it, having a weekly bin collection for each household seems like a good idea. However, as we increase the extent to which we recycle and change our attitudes to waste - seeing it more as a valuable resource and less as mere rubbish - it seems that there may not be a valid case for having our wheelie bins emptied every week.

If you now have a kerbside collection for your glass, plastic bottles and paper and use one of the four civic amenity sites for other items, you have probably noticed that the amount of stuff in your wheelie bin has dropped dramatically.

If you take your old clothes and curtains to the textile bins or charity shops and cardboard to the amenity site at St Johns or to Green Mann Bedding in Spring Valley, there should be very little left to put in the bin.

Batteries can go to the various collection points around the island, old spectacles back to the optician, and you can take small household items to charity shops or pass them on to somebody else on [www.freecycle.org](http://www.freecycle.org).

I know my husband and I could certainly manage with a fortnightly collection and I often wonder exactly what my neighbours who put out two wheelie bins every week find to put in theirs. I suspect they fill them with green garden waste that could go in a compost heap. Either that, or they waste mounds of food after being tempted by those 'buy one get one free' offers in the supermarkets.

In England many local councils have now changed to a fortnightly wheelie bin collection, alternating with the collection of recyclates in bags or boxes. But, thinking it was a vote winner, the Conservatives vowed in September 2011 to 'bring back your weekly bin collection'.

Eric Pickles MP, Secretary of State for Department of Communities and Local Government, offered a fund of £250 million for the Weekly Collections Support Scheme to help local authorities to re-instate weekly collections. Unfortunately for him the scheme backfired and the authorities didn't want his money.

Firstly, despite what the Sun says, the majority of people are satisfied with having a fortnightly collection and recycling rates have increased in some areas by 40% providing revenue for the authorities.

Local authorities pointed out that the real cost of re-instating weekly bin collections would be something more like £530 million, and that it would also have an adverse effect on their recycling rates just at a point when they were increasing.

A weekly bin collection to every household is one of those reassuring things that appear, on initial consideration, to be good, but that on closer analysis prove not to be the ideal way to deal with the type of waste created by our modern society.

Most of what we throw out is paper, plastic and packaging, which can be re-used or recycled. Most of us could manage with a fortnightly wheelie bin collection, and recycling rates here would improve as we put the emphasis on recovering those materials that can be re-used and recycled. So when you take that out, your wheelie bin will be almost empty.

'Give Us A Weekly Bin Collection' seems to make sense at first glance, but it may in the longer run be a concept that turns out to need changing as our life-styles and attitudes to waste change.

Zero Waste Mann sees most waste as valuable resources and materials that can be kept within the loop through re-use and recycling.

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Confessions of a cyclist *by Phil Corlett*

I've always cycled – right from when I was a school kid, in fact when I was a child of 8 or 9 or so, I even went diving on my bike.....my foot slipped off the kerbside of Castletown Harbour & I dropped ten feet, ending up in the sea, whilst still on my bike! The bikes we had in those days were often cobbled together from bits and pieces of other bikes, with cow horn handlebars, no mudguards and little or no brakes.

In the 'good old days' when there were far fewer cars on the road it was regarded as perfectly normal for children to venture pretty far afield and I can recall cycling with my mates from Douglas, up to 'the Head' onto the old scramble course there to do the jumps, and also up Richmond Hill to Knock Froy scramble course on a Wednesday night. We went all over the place on our bikes, with no worries about the traffic. Back then we didn't have mobile phones to stay in touch with our parents when we were out – youngsters would happily go exploring long distances from home and reappear when they were hungry!

The volume of traffic these days means that it's no longer regarded as safe for children to cycle around the public roads, at least until their road skills are well developed—and in any event many parents don't encourage their kids to explore in the way they used to as they say 'it's not safe on the roads as there's too many cars'!!?

Even as an adult cyclist I find the lack of cycle lanes can make my daily cycle commute a challenge, even downright dangerous – back lanes have to be my 'cycle ways' as they offer a much safer alternative to the main roads, letting me avoid both the traffic jams and the pollution they create. But it never fails to amuse me when I see chunky Chelsea Tractors with an array of bike racks on the back – the drivers adding to the traffic misery they're trying to escape!

Thanks to the efforts of Mark Cavendish this Island has a cycling record to be proud of – it would be great if more of us could be inspired by him. We might not all be champions at it but we can all enjoy the health and **cost benefits** of cycling (oil prices always seem to go up).

I really miss cycling (if I'm away etc) and exercise DOES make you feel better, so why not give it a try and brighten your day whilst getting from A to B, instead of being one of those poor frustrated people stuck in the ever increasing traffic jams on the IoM.

IoM FoE recently met with the DoI's Director of Highways and talked to him about various transport issues on the Island, including the need for more cycle lanes. Apparently the original plans for the road development on Richmond Hill had a cycle lane on it but this was 'cost-engineered' out by Treasury, and this whilst Mr Bell our current Chief Minister was in charge of it..... Hmmm!?

In the UK, Friends of the Earth has planned the Big Green Bike Ride - 5 days solid of cycling fun, to draw attention to the leisure, cost and environmental benefits it offers and raise much needed funds through sponsorship. Five days might be a bit much for all but the hardiest of us, so over here IoM FoE is organising a Family Fun Cycle Day on May 20<sup>th</sup> – a great opportunity to dust off your wheels, get out your biking helmet and join us for some fresh air. We'll be starting off at 11am from the Sea Terminal and there'll be two routes. The first is for the less fit amongst us and for children too small to tackle big distances (they'll be heading along the Prom).

**Sunday 20 May is Family Fun Cycle Day**

- ✓ 11am start at the Sea Terminal
- ➡ FULL ROUTE: Douglas to St John's
- ➡ FUN ROUTE: along the Prom to the War Memorial
- 🆓 FREE to enter
- ☕ Refreshments at the finish!

Clear and enjoy your ride, drink and eat regularly. Meet us at the Sea Terminal 10 May. You can do the ride just for the joy of it, or to raise sponsorship money for IoM Friends of the Earth or your chosen charity.



The other route is for adults and older children. This will go along the Harbour and out to St Johns ending on the green at Tynwald Hill. Bring a picnic and remember not to go too hell-for-leather on the way out – you'll be cycling back too, as sorry, but we're not encouraging fossil-fuel powered transport for the return journey – and sadly you can't take your bike on the Island's buses....the question you need to ask the DoI is..... why not!?

Part of the ride will be on the old Peel railway lines and we've been really glad of the help the DoI has given in terms of resurfacing materials to make this track more bike-friendly: it all helps.

Think about it: how would you like to envisage the Island in a few years time....as one great big traffic jam/parking lot, or as a green and clean place with an integrated public transport system with people cycling, walking and much fewer motor vehicles moving around, smoothly and easily, and where travel's a pleasure not a strain?

I know which I'd prefer....

All Bee-cause....by Cat Turner

IoM FoE is supporting the Bee Cause – a campaign to draw attention to the plight of bees in the British Isles, and (locally) to encourage people to make our island a more bee-friendly place.

To this end, Phil Corlett and Cat Turner recently gave an 'assembly' at St Thomas' CE School, explaining to the students how valuable bees are to us in a variety of ways.

The children asked some terrific questions and their enthusiasm was, in Phil's words, 'truly infectious'. We especially liked the bee impressions that Reception came up with! IoM FoE has a stack of engaging campaign material (plus seeds!) available; if you'd like to learn more, call into the Green Centre or check out the website.

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**Campaigning for the Island's environment**

**Is Black Silicon the Answer to all our Prayers? *from Page 1***

From this it's clear that if a manufacturing process reduces the size of the clean room, or improves the product throughput by using cheaper and simpler manufacturing techniques, and also improves the conversion efficiency by causing more light to be absorbed by the PV silicon, then the final PV panel should become much cheaper to make.

This was the aim of a process known as liquid phase deposition (LPD), developed by the U.S. Department of Energy's National Renewable Energy Laboratory and licensed to an American company, Natcore Technology Inc. LPD is a wet chemistry process; put simply it's a tank of chemicals that the PV silicon is dipped into to achieve the manufacturing step. The wet dip is also done at room temperature adding to the procedure's benefits. Natcore aims to commercialise the 'production method and equipment', then licence the method to (lots) of PV manufacturers - opening the prospect of lots of competition to make cheap solar cells, with high light-to-electric conversion efficiencies.

This method of manufacture also holds out the possibility of being able to 'stack' layers of semiconductor on top of each other so that different layers use different wavelengths of the incident light. One layer would convert the blue light for example while another layer could convert the red end of the light spectrum. This could lead to PV conversion efficiencies of 30% or more.

So if it all manages to come to fruition, and lets hope it does, there is the potential of much greater conversion efficiencies and also much cheaper manufacturing techniques for the PV chips used to make the black PV panels. Bring it on. For more details of the techniques and possibilities visit [www.natcoresolar.com](http://www.natcoresolar.com)

**It Ain't Necessarily So! *Continued from page 2***

It may be that as recycling becomes the norm on the island, and the collection of recyclates through kerbside collection is seen as our main waste/ resource collection. Some local authorities here will consider changing to alternate weekly collection.

If so, we should not react with a knee jerk response. Remember, whatever is left in your wheelie bin goes to the incinerator at some expense to local authorities, and that cost will only go in one direction in future—UP.

Recyclates, on the other hand, can be a valuable source of revenue for your local authority—this is



*These old bottles could be useful now that I've drained them of all that pesky wine....*

definitely something not to be sneezed at in these cash-straitened times!

I hope that in time, we will all come to see the retrieval of recyclates as our 'primary bin collection', and that the rest will be a small amount of residual rubbish that can be collected once a fortnight.

*For information on where you can take recyclable materials, if you're not lucky enough to live in an area with kerbside collection, check out your local amenity centre.*

*And remember, it's worth keeping on pressing your authority to look into kerbside collections. After all, if we don't ask, we won't get....*

**IOMFoE has held its 2012 AGM by Catherine Turner**

IOM Friends of the Earth held its AGM in April, electing the officers who will serve for the coming year. They were: Phil Corlett, Co-Ordinator; Ian Costain, Treasurer; Vicky Christian, Membership (grateful thanks went to Vicky for taking on this role for the first time—as well as to Betty Burton, the previous Membership Secretary, for her hard work in fulfilling the role to date); and Cat Turner, Secretary.

At the same time, the group reviewed activity over the past year, and what lies ahead. As well as running various campaigns and activities, it was noted that IOMFoE is having increasingly regular meetings with Government. This, coupled with its current curatorship of the weekly Green Column in the IOM Examiner, means our voice is being heard more consistently.