

A simple piece of human-powered technology has revolutionised lives across northern India, reports **Martin Wright**, and sparked fierce debate about the morality of offsetting.

# Pump

In the middle of a field on the plains of northern India, farmer Ram Dyal is making a point. One hand grabbing my sleeve, he wraps his other round a sturdy bamboo pole. “This”, he says, slapping it for emphasis, “has lifted poverty from our valley. It has lifted poverty from my home.”

He’s speaking through an interpreter, but looking me hard in the eyes to make sure I understand.

‘This’ is a simple treadle pump, costing around \$30, which uses a couple of hours a day of human power – Ram Dyal’s feet and those of his family – to raise water from a tubewell to irrigate the fields.

It doesn’t sound that exciting – a bamboo frame and treadles, a simple two cylinder pump, and a long plastic tube thrust deep into the soil. But its effects are nothing short of revolutionary. Because by enabling crops to be grown all year round, rain or drought, it transforms the livelihoods of the rural poor.

## **A rural revolution**

Take Ram Dyal’s family. Since installing the pump, they’ve diversified on a grand scale, growing garlic, cauliflower, cabbages, tomatoes, cucumbers, herbs and

spices, for their own consumption and for sale. As a result, everyone’s better fed, healthier – and much better off, thanks to selling surplus crops. This means they no longer have to decamp en masse in the dry season to work for an unreliable pittance as labourers on the notoriously hazardous building sites of one of India’s burgeoning cities. Instead, the children can stay at school, and the family no longer lives in fear of losing their land.

It’s a success story repeated, with variations, among hundreds of thousands of families right across northern India, where the relatively high water table lends itself to such technology. The pumps were developed by International Development Enterprises, India (IDEI) and now form the heart of a thriving network of energy entrepreneurs – manufacturers, retailers and installers - which has generated sales of approaching two million pumps in total. Studies by the World Bank and the Acumen Fund confirm that families with treadle pumps enjoy better nutrition, health, income and prospects than they did before.

It is a triumph of simplicity and scale: a straightforward, robust technology: living proof that dramatic improvements in quality of life don’t have to



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# action

come from the use of fossil fuel. As such, it was a fitting winner of an Ashden Award for Sustainable Energy (it was as an Awards Judge that I was lucky enough to see the project and talk to dozens of its beneficiaries at first hand).

Heart-warming stuff – but what has this got to do with offsets? The answer lies in the alternative: the diesel pumps, which, despite their shortcomings, had been spreading rapidly across the country. By replacing diesel, or removing the need for its adoption, the introduction of treadle pumps is avoiding the emission of substantial quantities of CO<sub>2</sub> (around two-thirds of a tonne annually per pump). And that makes it an ideal candidate for offset funding.

Emissions credits bought on the voluntary market through ClimateCare have enabled IDEI to roll out the treadle pump programme much faster and further than would have been possible otherwise. It's not been the only success story of this kind. Numerous other small-scale renewable energy schemes, from solar electricity to clean, energy-efficient cookstoves; from biogas digesters to micro hydro, have been boosted thanks to emissions credits sold by ClimateCare and

other offset providers.

Together, they exemplify just what can be achieved through the best sort of voluntary offsets. Get them right, and they don't simply result in measurable carbon reductions – important though these are. They also produce measurable improvements in the quality of life of ordinary people, particularly the rural poor in developing countries – and the quality of the environment on which they depend.

Who could possibly argue with that?

## Enter the backlash

Brendan O'Neill, for one. Writing in *Spiked Online* in 2007, the influential commentator lambasted the treadle pump offsets as nothing short of "eco-enslavement". ClimateCare, he argued, was "encouraging people in the developing world to ditch modern methods of farming (such as diesel pumps)... so (its clients) can fly around the globe with a guilt-free conscience on the basis that, thousands of miles away, Indian villagers, bent over double, are working by hand ... doing hard physical labour ... rather than using machines that emit carbon."

"Feeling guilty about your two-week break in

**Water of life: treadle pumps bring prosperity to Indian farms**

## “Hard work? It’s only walking up and down...!”

Bhikram Singh, a vigorous seventy-nine year old, is one of life’s enthusiasts. “In the old days”, he told me, “I just had one crop, the wheat. I used to use the diesel pump, but it was expensive, and I couldn’t always hire one when I needed it, and it washed all the topsoil over to one side of the field. I really wanted to get out of that mess...”

The great advantage of the treadle pump, he explained, was the way it sent just the right amount of water, at the right time, across the fields, at a steady trickle which allowed the moisture to sink into the soil rather than sluice it away. “Now I get three or four crops a year ... we can eat so much better. I buy new clothes for all the family. Next year I’m renting more land so I can expand...”

Wasn’t the pumping hard work? “Nooo! It’s only walking up and down! It’s like climbing a hill. If you want hard work, try carrying the water all the way from the well, like we used to.” (I tried the pump; once I’d got used to the rhythm, the effort felt like cycling gently uphill at a slow but steady pace. Others have described it as being like a step machine at the gym.) Then Bhikram pointed at his knee. “See this? It used to be swollen and painful. Now, the pain’s eased and the swelling’s gone down...”

Across the field, a girl aged 12 or so leapt onto a pair of treadles, laughing and showing off to me that she could work it, too. Photos of children like this have sparked allegations in the West that such ‘human scale’ technology encourages child labour. To which the only answer is: yes, children – mainly teenagers, but some younger – do indeed work the pumps: on average for around 30 minutes a day, according to an Acumen study, either before or after school.

This is hardly child labour of the sweatshop variety; more a case of helping out on the family farm, a commonplace for children across India. Far better to spend half an hour on the pump and the rest of the day in school, than long months on a building site...



Barbados ... living it up with cocktails on sunlit beaches?”, added O’Neill with a flourish. “Well, offset that guilt by sponsoring eco-friendly child labour in the developing world! Let an eight-year-old peasant pedal away your eco-remorse...” And so on, at some length.

It was wonderfully polemical stuff – and wildly wide of the mark, at least as far as the facts were concerned (see box, ‘Hard work?...’). But O’Neill’s central claim – that carbon offsets were no more than a rich Westerner’s guilt-trip – struck a chord with many. It epitomised the backlash which erupted against offsets in the mid-2000s, and which still has considerable influence today.

In some respects, it was inevitable. Offsets had become a bit of a green fashion badge among celebrities, with everyone from Coldplay to Atomic Kitten releasing ‘carbon neutral’ albums. Such a surge of pop star glamour might have made life easier for the picture editors (the lissom bodies of the Kittens being a welcome alternative to yet another biogas digester), but it was a red rag to the bullish scepticism of your average journalist. Set against a lifestyle rich in planes and limos, offsets could easily look like a token gesture – and in

some cases, they probably were.

O’Neill is no environmentalist – quite the contrary – but his views found echoes in the green movement too. From George Monbiot to Greenpeace, many argued that offsets effectively ‘legitimise’ carbon emissions: after all, why bother with the thorny task of reducing CO<sub>2</sub> when you can simply pay someone to do it for you?

Some described it as ‘buying complacency’ – a guilt-free pass to carry on as normal. Monbiot and others even likened offsets to the indulgences sold to medieval sinners to earn time off purgatory. And one website memorably satirised the whole process by offering unfaithful partners the chance to become ‘Cheat Neutral’. Want to betray your spouse? Simply pay £2.50 to someone who pledges to stay faithful...

Dubious motives aside, other more concrete criticisms fuelled the backlash. Under close scrutiny, some early offset schemes looked at best ineffective, and at worst no more than a scam, providing little or no assurance that the money invested was really going to make a difference. A few high-profile failures drew withering fire. Coldplay supported a mango plantation





Photo © Martin Wright

Making the connection:  
by bringing solar power  
to remote communities,  
offset funding can speed  
development



Photo © Vikram Raghuvanshi - iStock

project in India to help offset emissions from a world tour. The trees were planted, but someone forgot to ensure they were watered...

Forestry offsets in particular attracted flak. If you're relying on trees to sequester your carbon, you have to ensure they'll be there for decades to come – up to a century, in fact. Which, at a time of growing pressure on land resources, is a big ask.

Investing in renewables and energy efficiency, which displace carbon emissions rather than soak them up, sounds more certain. But, as with forestry, it leaves the nagging 'additionality' question: would the development have happened anyway without your support? Because if it had, you couldn't credibly claim that it was offsetting 'your' emissions. And at a time of massive investment in such technologies, that is an extremely hard call to make.

Some of these shortcomings were perhaps inevitable in a market that was less than two decades old, and maturing fast. And the critics have done everyone a service by prompting the offset industry to examine its practices and draw up new, more robust standards.

### **Guilt-tinged or guilt-edged?**

But it's worth dwelling here a little on that core question: are offsets merely an easy distraction from taking real responsibility for our own emissions?

The honest response is: yes, possibly, on occasion. There have no doubt been some, usually individuals rather than companies, who have bought carbon offsets as a token gesture, with little or no intention to modify their lifestyles further. These are the caricatures savaged by O'Neill and others.

However, even if that were the case, the criticism would only be valid if the offsetter would *otherwise* have taken more direct action to cut emissions. And there's precious little evidence that this is so.

Take a hypothetical Land Rover driver, who might, one assumes, be quietly reassured that his miles have been offset thanks to the company's deal with ClimateCare. Then he reads that it's all a con. So does he think: "Hang on, this offset stuff isn't all it seems... I need to do more,

## **Development potential**

Many see a promising marriage between offset projects and more conventional development. "Africa is littered with half finished projects, where, say, clean water provision's been put in and then the funding's dried up", says ClimateCare's Edward Hanrahan. "Many of these projects also reduce carbon emissions, which can provide a sustainable source of finance." He promotes a vision whereby charities identify the most worthwhile aid projects and build relationships at the sharp end, and offset providers can focus on achieving verification and building relationships with corporate buyers.

much more...?" And so the scales fall from his eyes, and he gives up his car, gets on his bike, and stops flying to his weekend pad in the Med? It seems, to say the least, unlikely.

The decline in numbers of individuals buying offsets over the last five years has hardly been matched by a surge in personal commitment elsewhere. And it's not surprising. A large part of offsets' early appeal was to people who genuinely wanted to do the right thing, but were never going to buy into making revolutionary lifestyle changes – no matter how much they were hectorred by environmentalists.

For them, the relentless 'carbon-sin' rhetoric simply had the effect of chipping away at their willingness to help out. And it failed to acknowledge the very real limits of 'carbon austerity' in industrial societies with a carbon-intensive infrastructure. One in which, unless you're a monk on the one hand, or a wealthy green gadget freak on the other, it's hard to get through your daily round without emitting significant amounts of carbon.





So it's not surprising if, rather than abandon offsetting their car emissions and taking to the bicycle instead, many appear to have used the backlash as a trigger to do nothing at all. And for those who were always inclined to feel cynical, the criticisms have given them the perfect excuse for inertia. They have decided, as it were, that it is better to curse the darkness than light a single candle...

Corporate buyers have taken up some of the slack, with volumes rising year on year apart from recession-hit 2009, but the negative press has made many wary of being associated too closely with offsets, whether or not they think they are effective. As Paul Monaghan, Head of Ethics and Sustainable Development at the Co-operative Bank, puts it: "All the negative publicity just gives companies another excuse not to buy... The green movement", he concludes, "has shot itself in the foot here."

A thorough investigation by the UK Parliament's Environmental Audit Committee, published in 2007, concluded that the voluntary offset market could play an important role in both cutting emissions and raising awareness - and it urged both government and business to get behind it. But by then, the cynicism was well entrenched. Forum for the Future's Jonathon Porritt describes the reaction to voluntary offsets from fellow green activists as "nervous, muddled and hostile," with commentators distracted by the "variable and uncertain" aspects of the evolving market, along with simple ignorance of what it can achieve. "Inevitably some companies have dropped out," because of the negative publicity, he notes - and that means more greenhouse gases are being emitted than they otherwise would be.

### **Emissions impossible**

And there's the rub. Everyone involved agrees that offsets should never be the sole, or even the prime, strategy for cutting carbon. That should always begin at home. But unless you source all your energy from renewables, transport all your products in electric trucks, never step on a plane, train or bus, let alone consume anything made in a Chinese factory, you'll still have some

carbon emissions against your name. So what are you going to do about them - unless you offset?

Intriguingly, such evidence as there is suggests that, contrary to the activists' rhetoric, individuals and companies who make a positive choice to offset *don't*, as a rule, end up merrily burning more fossil fuels, smug in the knowledge they've atoned for their sins. More often, it seems to act as a prompt for more engagement, rather than less. And in the worst case scenario, as ClimateCare's Adam Harvey points out, even if the offset gesture is token and the motive is guilt, the money spent is still out there, doing some good.

In time, of course, there might be a genuinely global carbon market, where these transactions happen seamlessly, driving down carbon emissions. Until then, investing in socially progressive offsets can make a direct, tangible difference to both your carbon footprint and the quality of life of some of the world's poorest people, none of whom, it's pretty to safe to assume, give a damn whether that funding has precisely balanced your emissions or not.

On which note, it's worth reminding ourselves just why we're concerned about carbon emissions in the first place. It's not because we have some abstract obsession with atmospheric chemistry. Rather, it's because we fear the human consequences of climate change. These will be felt all the harder, and sooner, by people like Ram Dyal and his family, people who are in every sense on the front line of climate change.

So when we invest in a rigorous, pro-poor offset scheme, we're achieving two goals simultaneously. We are both fulfilling our responsibility to reduce our environmental impact - and improving the quality of life of those threatened by it.

Get offsets right, then, and they're about much more than simply balancing emissions; they're about speeding sustainable development, right across the globe.

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