■ **Áilín Quinlan** learns how places like Baltinglass have become hotbeds of a new wa...

Energy revolution driven by village

> ❝ We will create a pool of energy generated by Baltinglass. While some people would produce the energy, others would just buy it. ❞

NESTLED at the foot of the Wicklow mountains, the village of Baltinglass is renowned for its rich historical and archaeological heritage — a Stone Age passage grave, an ancient monastery and a church said to date from 700 AD.

However, this picturesque village on the banks of the River Slaney is about to become even better known — and for a far more modern reason.

Residents are poised to launch a highly sophisticated renewable energy network or "smart grid" which should see them source more than 30% of their electricity locally.

"Baltinglass already has a number of alternative energy sources, including wind, solar and hydro, which are owned by residents of the village and people in the outlying area," says Dudley Stewart of MPower, a company working with the Baltinglass residents and other communities around the country to facilitate such initiatives.

Baltinglass, he says, is already off to a good start — and it's hoped, by spring of next year, householders will be making, sharing and purchasing locally-generated power: "A number of people already have solar panels on the roof of their homes in Baltinglass," says Stewart.

"One house has a water turbine beside the river which runs through their farm while other local residents have wind turbines or generators."

All of these people have surplus power at certain times, but can experience power shortages at others.

Several other sites have been identified as places which have the capability for installing more alternative energy sources and, reports Stewart, locals have been willing to get involved.

The challenge now, he believes, is to enable Baltinglass residents to share the power that they're already generating, and will generate in the future so that surpluses from one generator are available to counteract shortages in another.

Here's where Mpower comes in: "Up to now the problem has been that under Irish legislation you couldn't sell or share power across the boundaries of your land without a special licence because of fears that it would affect the quality of the power."

Mpower, however, has developed smart internet technology that allows power sharing without interfering with energy quality at local level: "We are confident of getting a licence," says Stewart, whose company works nationally to facilitate local initiatives, like that in Baltinglass.

At the moment, he says about 20 people in Baltinglass are involved. Of these about

Baltinglass, Co Wicklow, a quiet village at the heart of a quiet revolution in the way Ireland generates its power.

Pat Gill of Spirit Ireland says energy co-ops can in time feed into the national grid.

eight of whom are current producers, while 12 more are poised to start producing energy. Organisers are also examining the possibility of a small biomass plant which would use wood residue to generate power: "Eventually we would see the village of Baltinglass becoming semi-autonomous as regards its power supply.

"We will create a pool of energy generated by Baltinglass," he says, explaining that while some people would produce it, others would just buy it.

Eventually those involved would buy in more than 30% of their power from local sources.

Mpower is carrying out research to establish how many people would be interested in joining the group, either as purchasers of locally generated power, or as producers.

By the spring of 2013, the organisers hope, a power-sharing system will be in place in Baltinglass, where surplus energy is produced by somebody and is automatically picked up by other consumers using special internet technology. At the moment, explains Stewart, people can already use their mobile phones or iPads to turn on the lighting or the heating by remote control. Similar technology will be used to share energy.

This is exactly the type of local energy co-operative that the Spirit of Ireland organisation wants to see. The group, set up in 2009 to encourage the harnessing of alternative energy, wants to make it easier for local groups or co-ops to access the technology and back-up required to set up projects involving everything from biomass, to wind and water-generated energy.

Their idea is also to enable local co-ops to earn income from sources like small wind turbines, micro-hydro from local rivers, or projects suitable for marginal land.

"This can only work when ordinary people take ownership of the idea and grasp the opportunities it offers," says Pat Gill, founder member of Spirit Ireland.

He believes that while co-ops begin small, they can grow in size and may eventually build larger projects which could choose to feed into the national grid and/or the Spirit of Ireland energy reservoirs, the first of which is could be in operation on the west coast of Ireland by 2018.

"Ireland spends about €6bn a year on fuels like oil or gas or coal, whereas the wind blows for free and could generate huge electricity at no cost.

However the wind is volatile and the problem is how to connect wind or sea energy to the ordinary people of Ireland.

"We want to encourage farmers to set up co-ops and produce electricity. Renewable energy happens within communities, he points out, conventional electricity generation happens behind fences.

In the renewable energy sector, he says, everything happens within the community: "Everyone in the community can become part of the co-op. Everyone in the community has something to offer. The farmers can get an income from leasing the land, the neighbours get an income from being part of the energy co-op by investing in it.

In Ireland, the idea would be that everyone puts something; money, resources or consent into the kitty to build a wind farm:

The electricity from the utility size farm would be sold to the national grid and the proceeds divided up, similar to the way the proceeds from the agricultural co-ops work.

"Microgeneration is when the electricity produced is used within the local community," he explains.

Up to now, some environmentally-minded people did this and sold surplus power to the national grid for a small return.

"However, now the technology exists to enable people to sell electricity within their own local community. At the moment the large wind farms sell their electricity into the market, it goes onto the grid and is sold into the national energy pool, which is called the Single Electricity Market.

"We now know a way of doing this in microcosm with small community energy producers. Some of the members of Spirit of Ireland worked on ways to form smaller co-ops in local community and use the electricity within the local community.

"Instead of buying the electricity from the ESB you buy it from your local co-op which is in charge of a small local energy pool. This is fed into homes and businesses through the existing local network."

This tends to eliminate the NIMBY factor, he says.

Because the local community owns the co-op all of the benefits stay local.

The co-op can choose to sell electricity at the same price as it would be sold by say the ESB or they can offer it at a cheaper price so that local businesses become more competitive.

This concept could be mirrored in the production of energy by other methods such as biomass which uses plants or forestry waste to produce energy in combined heat and power plants or small hydro-

electricity produced form rivers and streams.

Any community that is interested in doing this should visit www.energy co-ops.ie .

"All you need is a group of people in your community who are ready to consider it," he says, adding that just seven people is the minimum required to start up a co-op.

"There is a NIMBY problem if benefits don't flow to the community and where people are not involved. When the community is actively involved you don't have problems with the NIMBY syndrome.

"By that we mean community ownership. It has to be open to all of the community."

Proximity to Atlantic coastline makes wind energy natural choice

Quantity surveyor Padraig Howard believes that renewable energy is the thing of the future — and now he and some friends have done something about it:

"Some time ago some colleagues and I looked at trying to do a renewable energy project. We felt it was the thing for the future."

Padraig's in-laws live in the Mount Callan area in West Clare — it's a windy area close to the Atlantic Ocean, so deciding to harness wind energy into a big wind-farm was a no-brainer:

"We brought together a small group which ultimately grew to more than 30 local families in the Mount Callan area," says the 35-year-old father-of-two and part-time farmer.

Most of those involved were farming families.

A co-operative project was launched, and the participants assembled a 3,000-acre site:

"All the families put land forward. We consulted engineers, ecologists and planners and employed a firm of environmental consultants.

Planning permission for 31 wind turbines was granted, after an appeal, last August.

"The group is currently trying to secure a grid-connection for the project. We are in a queue with a lot of other projects and don't know for sure when it will be granted — but when it is we will begin," he says.

They already have a commitment on finance subject to grid connection — the €180m project will involve the construction of three-megawatt turbines measuring more than 400 feet in height.

"We will be selling the electricity into the national grid. The landowners get an income every year, while the debt is being paid off.

"Once that's paid off, the project is owned by the development company which comprises the 30 families, as well as the promoters and the big investors.

"We'd be hoping to attract more local investment.

"We'd hope that people in the locality, the county in general, or the country at large, would invest in this project.

"It's quite a task to raise this kind of money and ultimately we would like to see long-term ownership of the project retained locally."