



**RIVER CITY:** Within 12 months, energy from the Clyde may provide 80 per cent of the heat for buildings in the Gorbals connected to Star Renewable Energy's district heating system.

# GO WITH THE FLOW

Glasgow's Gorbals will be the first area to benefit from a new £3.5m scheme which will harness the Clyde's potential to deliver heat for connected buildings

by Neil Clark

**H**EAT harvested from the free resource of our rivers. Like everything else labelled free, it sounds too good to be true – and it is. As Dave Pearson, director at Star Renewable Energy, (SRE) a Glasgow-based high temperature heat pump manufacturer points out, the investment needed for water source heat pumps is significant and the uptake thus far in the UK has been slow. This is due to a reluctance to engage in a project that is more expensive upfront, with technology that is new and possibly confusing.

The current reliance on gas – for heating our homes and offices – is another obstacle but Pearson says it is imperative to deploy new techniques such as river source heat pumps and make it easier to connect to new district heating networks.

He points to the beauty of the technology: solar energy falls on the earth, leaches into the river and travels downstream thanks to rainfall and gravity into the heart of the city – where it provides heating.

The company has a track record in the technology. Its project in Drammen, Norway, has shown that we can use large heat pumps to keep our homes warm – and Star Renewable's technology is capable of taking water as cold as two degrees centigrade and boosting its temperature to as much as 90.

Pearson believes that asking people to go green doesn't have to involve a financial compromise; it actually means being more profitable and the company is now at the centre of a district heating project in Glasgow's Gorbals.

The £3.5 million industrial-sized water source heat pump will draw energy from the Clyde to provide 80 per cent of the heat for the connected buildings in the district, ensuring that the network will deliver carbon reductions that will meet the 2035

climate change goals 17 years early. The project is funded by a 50 per cent loan from the District Heating Loan Fund and a grant from the Low Carbon Infrastructure Investment Fund.

"We saw the Government's desire to fund projects that were proving difficult to advance and we applied for five projects: this was one of the five that we had identified as having applications for our technology and this is the one we have carried forward," says Pearson.

He explains that this is the largest proposed scheme in the UK and the first to replicate the level of heat that a gas boiler can deliver.

"If we are to displace gas to displace CO2 and NOx (nitrogen oxides) pollution we have to make it easy for the buildings as they won't accept deep change to their internal systems.

"It's clearly a big project and though we aren't a construction company we realised that we needed to demonstrate leadership. With the right team in place we have de-risked it but there still needs to be a change in attitude from customers.

"People are programmed to change their gas supplier every few years but what we needed was a commitment for a significantly longer period of time, perhaps 20 years."

Star Renewable Energy is at the centre of the project which includes law firm Pinsent Masons LLP; SLR Consulting Ltd, which provides environmental advice, Oberlanders Architects LLP and Etive Consulting Engineers Ltd.

Pinsent Masons was brought on board as a leading adviser for low carbon and decentralised energy services and because of its in-depth experience of private and public-led delivery structures for heat schemes.

The firm has a market-leading energy practice and is heavily involved in the renewables and low carbon

Legal director Kate Turner, who sits on

**ON TAP:** The state-of-the-art heat pump technology can take cold water from the Clyde and boost its temperature dramatically to provide a 'green' district heating system.

the board of several regulatory and working groups in the renewables sector, firmly points out that each district heating scheme is unique and brings its own challenges and opportunities. "We are delighted to use this opportunity to work closely with Star Renewable Energy to structure the project and ensure that the property, planning arrangements and heat supply terms reflect market positions and can meet the commercial objectives of the project," she says.

Jonathan Bacon, Principal – Civil & Structural Engineering at SLR, said: "A number of SLR Consulting's teams worked with SRE to secure planning permission for the project. A key element of the pre-planning phase was the interface between SLR's engineered design solution and the Clyde's aquatic ecology to ensure that the intake and outfall pipes

prevent fish and juvenile eels being incorporated in the flow, which was achieved by designing special screens.

"The company can draw on wide experience of works in and around the Clyde while also working on projects that require support from ecologists and hydrologists that require statutory consents and liaison with third parties such as fishery trusts and natural heritage."

Philip Macdonald, managing partner at Oberlanders Architects LLP agrees that building directly on the banks of the Clyde brings unique challenges. "The Clyde is hugely symbolic and significant to Glasgow so there's a definite desire to make sure we do the right thing," he says.

"It's great to be part of the process. Every city craves renewable, pollution-free and sustainable energy. To be able to

create that energy from the river that was probably the initial spark for the birth of the city is a beautiful idea and we are sure that once SRE delivers in Glasgow the rest of the world will follow."

At Etive Consulting Engineers Ltd, director Hamish Martineau explains that the company is providing the civil and structural engineering services for the project, including the design of foundations and the complete building structure within which all mechanical plant will be located.

The company is becoming increasingly involved in renewable energy schemes and Martineau points out that current and planning legislation places a specific requirement on all new developments to include renewable energy measures.

"The Gorbals project has however been most interesting and satisfying, having the specific purpose of generating renewable energy, as opposed to simply being one factor in the design for the commercial projects we are often engaged in," he says.

Dave Pearson remains frustrated that businesses – despite the Renewable Heat



**'It's great to be part of the process. Every city craves renewable, pollution-free and sustainable energy'**

Initiative (RHI) – continue to burn gas when the carbon footprint is not compatible with a low carbon society. "The CO2 challenge is largely a gas burning one – this technology allows us to harvest heat from the local river and deliver cleaner, cheaper heat to the local community.

"Provided we get agreement from the council to buy the heat soon and enough time from the Scottish Government to deliver the project (given the delays to planning and heat purchase contracts), it will be running within 12 months."

This is a commercial review. The opinions expressed on these pages do not necessarily reflect those of The Herald newspaper.



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