Green WIN

Climate change is one of the biggest challenges the world is facing and a top priority: from the United Nations (UN), where Climate Change is Sustainable Development Goal (SDG) number 13, to the European Commission's European Green Deal.

Involvement and commitment of all stakeholders is crucial in addressing these challenges.

Climate change is already impacting on Water Management Organisations (WMOs') operations and infrastructure. In recent years, summer droughts have reduced canal water supplies and winter storms have resulted in infrastructure damages that have impeded navigation and in some cases have led to canal closures.

EU focuses primarily on reducing emissions from transport and less on the infrastructure needed.
Several organisations throughout Europe have come together to respond to this, and try to find solutions to reduce greenhouse gases (GHG) emissions generated during their operations and transition to a low carbon infrastructure.

The result is the project GREEN WIN.

GREENer Waterway INfrastructure

This INTERREG NWE project was approved on 29 May 2018 under the Low Carbon priority with a total budget of €2.45m over three years. The project addresses the problem of excess energy use and high carbon emissions WMO's cause across NWE when pumping water around the region's rivers and canals.

Green WIN aims to demonstrate a 15% reduction of CO_2 emissions generated at 11 trial sites in Ireland, UK and France by 2021. This is a reduction of 195 tonnes of CO_2.

WHO?

Canal & River Trust in the UK are the Lead Partner and works with five other organisations from the Netherlands (Rijkwaterstaat), Belgium (Vlaamse Landmaatschappij (VLM) and Université de Liège), France (Voies Navigables de France (VNF)) and Ireland (Waterways Ireland) across a range of disciplines. Also involved are some key pressure groups such as Inland Waterways International (IWI), Inland Navigation Europe (INE) and the Network of Inland Waterways Europe (NIWE).

Involvement from SME's and / or Trade Organisations is key to the project's success and Green WIN is working to set up an **Advisory Group** to help steer the trials in the right direction, offer practical suggestions, commercial insight and help increase the likelihood of getting greener technologies, systems and processes to market.

HOW?

In order to measure the project success , baseline data on energy consumption and efficiency, and current CO_2 emissions for the selected pilot sites was collated and reviewed to produce recommendations for delivering energy savings and CO_2 emission reductions.

Caen Hill, one of the UK trial sites

Pump at Caen Hill

Selected pumps from partner sites will be tested in laboratory conditions at Université of Liège's Urban and Environmental Engineering research unit to identify technological adaptations needed to reduce GHG emissions by an initial 15%. The trials will allow partners to identify the optimum equipment type and configurations for different hydrological scenarios and operational conditions and how existing technologies or energy solutions can

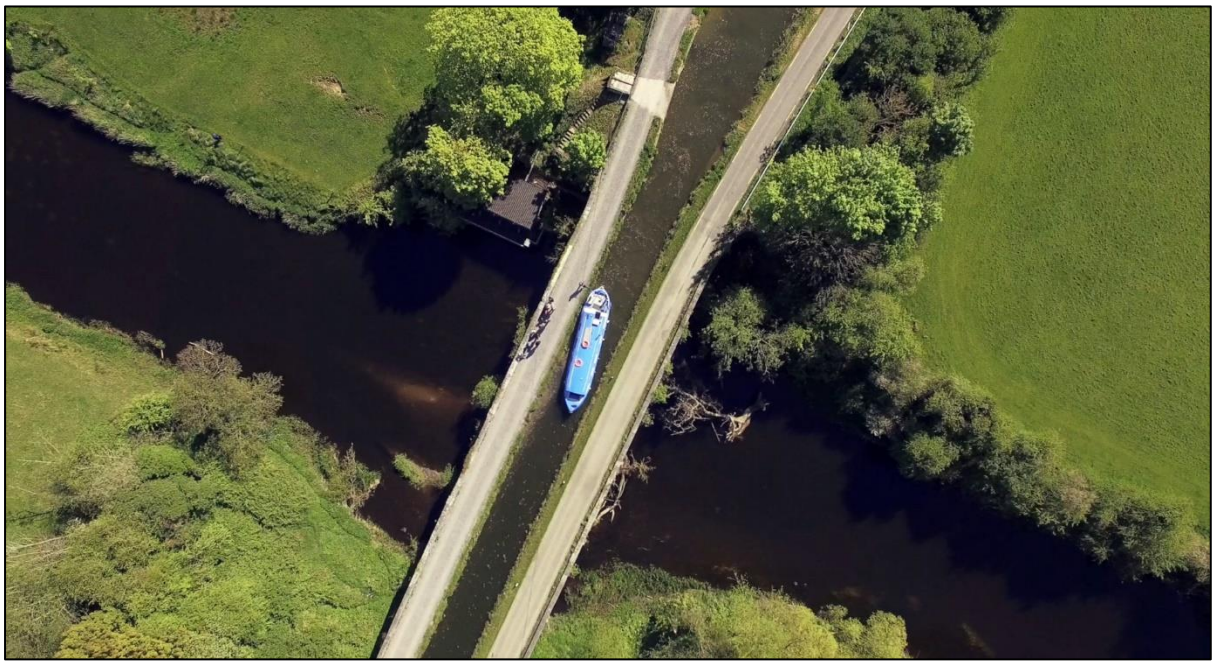
be adapted to be applied across all NWE waterways and the wider pump manufacturing sector. These include;

- Variable speed drives to optimise efficiency
- Automated control using SCADA systems
- Smart metering to track electricity consumption at pump stations
- Potential of using pumps as turbines ('PAT technology')
- Electricity network supply load balancing

Early conclusions are that a key focus for us should be on pump drives and pump control equipment - not necessarily the pumps themselves.

Working with SME's during the laboratory trials to test technology on the market across a range of operational waterway sites will help to find better solutions that Green WIN partners can promote.

Equipment and configurations identified will also be tested on site, at the 11 pilot locations across the UK, France and Ireland, with 'on the spot' practical input from SME's to help us maximise the CO_2 reduction.



Aerial view of the Leinster Aqueduct on the Grand Canal, one of the trial sites in Ireland

SME's involvement throughout the project will hopefully help find out how existing technologies or energy solutions can be adapted to be applied across all NWE waterways so that

MORE TO COME..

Green WIN is only the start. To extend the CO_2 reduction across Europe, WMO's outside the partnership will be encouraged to install equipment and use configurations/ processes demonstrated and adopt of a **'Code of Conduct'**.

Green WIN is working on developing a **'Greener Pumping Toolkit'**, which will help WMO's make the transition to greener infrastructures, and take practical steps in relation to investment and procurement for their pumping requirements.

As well as the Advisory Group, a **Greener Waterways Network**, will be promoting the strength of the results achieved through Green WIN and greener technologies for inland waterways.

Efforts will be made at EU level to get greater recognition for inland waterways. With Green WIN's results demonstrating energy and cost efficiency as well as practical scientific evidence of CO_2 reduction, a case will be made to EU policy makers to support development of EU policy in the area of waterway infrastructure, hopefully leading to legislation improvement insisting on pump replacement with CO_2 reduced / neutral pumps.

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