

Meaningful Learning Experiences

Strategic Commitment	✓	Part of a careers initiative across Greater Manchester
Curriculum Provision	✓	Learning about renewable energy and electricity generation
Employer Partnerships	✓	Involving a local community-funded initiative
Reflective Young People	✓	Contributing to specific learning skills
Informed Career Choices	✓	Presenting role models for careers in Engineering

Community hydro electric scheme helps students with revision for Science exam

The 'Compass' report for The Kingsway School in Manchester had shown that benchmark 4 (careers embedded in the curriculum) was only achieved in PSHE, not in English, Maths or Science lessons.

The teacher brief for this year 10 Science project stated: *'Students will have studied renewable energy and how electricity is generated using electromagnetism in year 9. We would like students to hear from people in the industry as to what problems they encounter and how they find solutions to them'*, hoping that it would result in *'greater interest in STEM / engineering as a career and how Electromagnetism is used in everyday life'*.

Stockport Hydro is a community owned scheme that generates electricity using two Archimedes screws driven by water from the nearby River Goyt. The project manager and community volunteers, which include retired engineers, provided background information and recorded video clips describing the technology and how it generates power. They also talked about their past professional roles and career paths, which included university lecturing and vocational qualifications.

The classroom resources were used as part of a revision programme in the summer term, which culminated in an exam. The teacher involved recognised that other schools covering the same topic might be able to use the classroom resources and a visit to the hydro generation scheme revealed opportunities to develop other curriculum projects, including using data about water levels, power generation, etc to support maths learning.

Benefits for the Students

- Student self-assessments indicated that, in particular, they had *'become more motivated to do well at school'* and *'with my decision making'*
- Student self-assessments also indicated their achievements were evidence of *'ability to solve problems'* and *'adapt easily when asked to try something new'*
- *'Opens up a wider range of choices. I'm better educated on career paths'*
I am proud of:
 - *'Understanding how hydroelectric power is generated'*
 - *'Getting a better understanding of hydro electricity'*

Benefits for the School

- *'The year 10 Physics GCSE exam that they will take contains 18 marks out of 100 which are covered by the revision slides I have put together'*
- *'Once Year 10 have been through their resources for revision they will be sent on to Stockport Hydro for them to use with other schools. They will have links, pictures and data directly taken from the information provided to us. I will also be sharing the Maths tasks that I create from them'*

Benefits for the Employer

- Stockport is a community-funded initiative, largely run by committed volunteers. The project provided an opportunity to test engagement with secondary students – and their families.
- *'We would be delighted to assist you in this project. It has so many facets which can be examined and we have a group of willing and dedicated volunteers who will be more than happy to work with your students on any issues you wish to explore.'*

Stockport Hydro

Two Archimedes Screws were installed to generate electricity



A community hydro-electric scheme provided information for year 10 students to apply learning about electricity generation and prepare for an end-of-year assessment.

Stockport Hydro

They turn generators to create DC electricity using motor effect



Stockport Hydro

... which is fed through inverters to change it to AC power and controlled using software



This achievement is evidence that I have developed the following skills:

