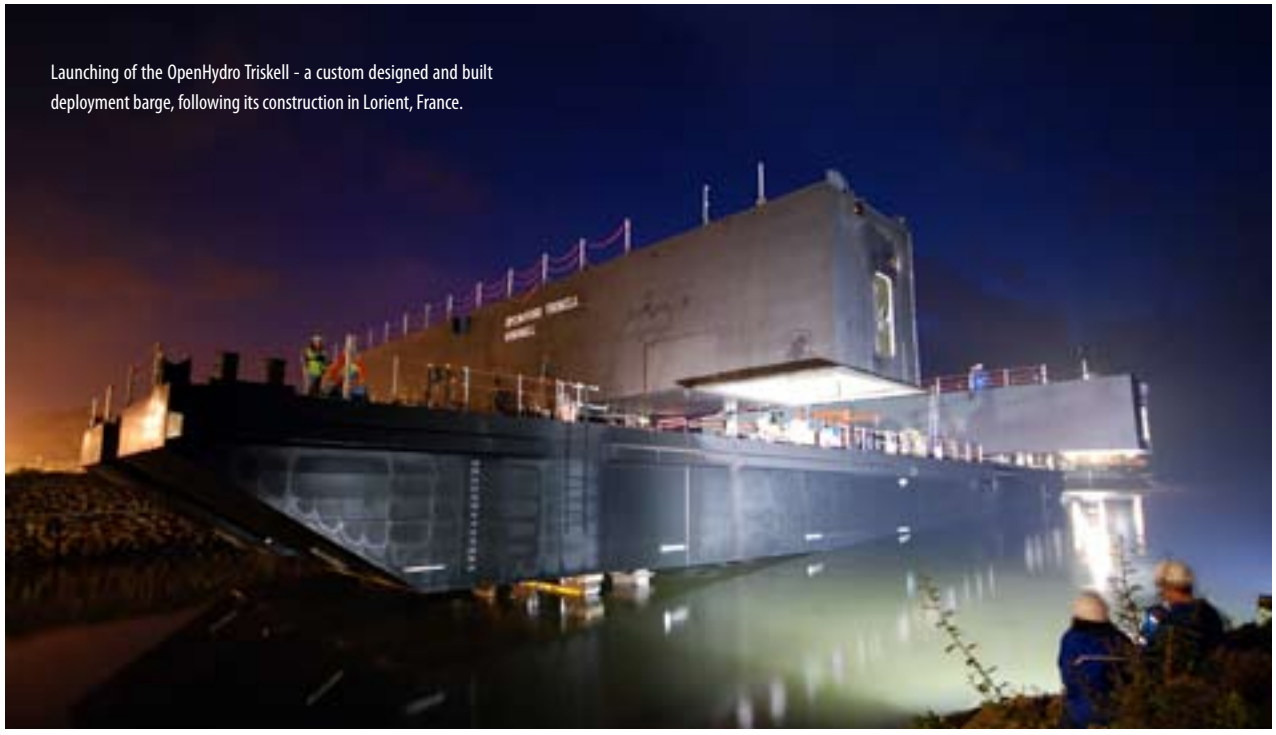


Launching of the OpenHydro Triskell - a custom designed and built deployment barge, following its construction in Lorient, France.

Rising tide

OpenHydro's CPD strategy aligns innovation with commercial success

Roisin Foley, HR Manager, OpenHydro, outlines how the tidal technology developer became the Engineers Ireland CPD Company of the Year 2011

OpenHydro was established in 2005 with three people – CEO, CFO and chief engineer. In the six years since then, the company's workforce has grown in line with the commercial demands of the projects won by the company. Through this period, the company has transitioned from being an R&D company, designing and building test turbines, to a commercially-focused organisation, designing, building and deploying turbines at commercial scale internationally for global utility companies.

The speed with which the company has grown, and with which the technology and market is advancing requires robust recruitment, orientation, performance management and development programmes. All of these systems allowed us at OpenHydro to fast-track our engineers into senior, responsible, international roles. Within the company, we have recognised the importance, even as a small organisation, of investing in CPD for employees to support both their development and our growth.

Business context

Having started as a small-scale R&D company with unique expertise, the challenge for the organisation in recent years was to transition from an R&D organisation to become a commercial business capable of supplying turbines at volume to satisfy the demands of international energy providers. This had to be achieved while, at the same time, delivering the business plan and our shareholders' return expectations.

This transition required the implementation of a simple, yet robust, practical framework. That framework now ensures that the organisation finds and fosters the necessary expertise to be able to design, build and deploy turbine systems at a commercial scale internationally in some of the most challenging geographic environments in the world.

To enable this ambitious company-wide transformation to take place, CPD was central in meeting the following objectives:

- ensuring all employees within the organisation had clarity and alignment behind the overall strategic goals of the organisation;
- aligning the training and development plans for our employees with the strategic imperatives of the organisation, with a particular focus on commercial-awareness, project management rigour and financial management during the crucial growth and expansion period;
- scaling the team while ensuring no compromise in the integrity

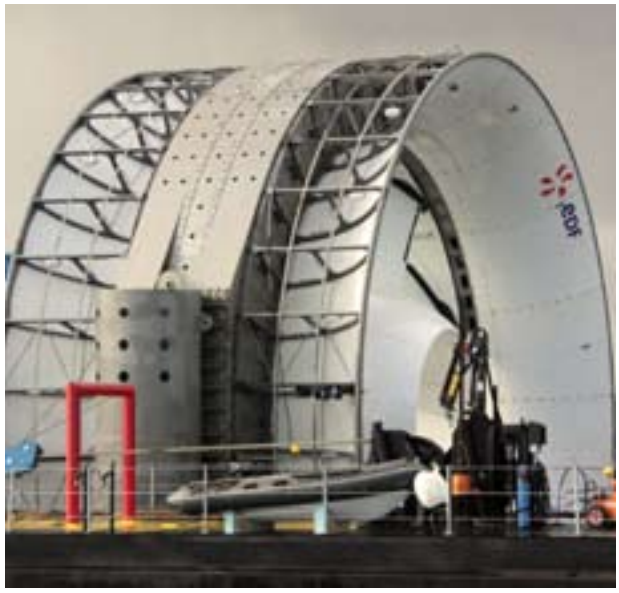
of our culture and the quality of the new recruits;
- facilitating the efficient integration into the organisation of new recruits; — supported, guided and mentored by their peers and colleagues to ensure that they optimised their capabilities in the shortest possible period of time; and,
- building succession planning into the business – ensuring that we are developing tomorrow's leaders for OpenHydro today.

The overall strategic goal was to move from being solely an R&D operation, building turbines for test purposes, to being a supplier of turbine systems at commercial scale and volume by 2013. During that time, we would have to demonstrate the following:
- an ability to design and manufacture turbines at scale;
- the development of a commercial scale deployment and recovery methodology; and,
- our capability to establish an array of grid connected turbines (i.e. a tidal farm).

Key CPD processes

Our company plans to deliver the 2013 objectives were ambitious and we had to ensure that everyone knew what their focus needed to be at all times. This required complete alignment across all departments.

To that end, one of the primary CPD methods we employed to facilitate this was the launch of our corporate Performance Management and Objective setting process in quarter four of 2009. Even though we were approaching the end of the company's performance year, we launched the system as a pilot initially, to ensure that for the full 2010 year, the process would be updated with feedback embedded. We carried out a number of training and information sessions during October 2009 to provide all employees with the details, central to this process. There were four criteria:
- it was a two way process, employees needed to take responsibility for their performance measurement and professional development in line with the company's priorities, rather than waiting for their manager to initiate it;
- assessment of company behaviours was embedded into the performance management discussion, and gave equal weight to assessing the employees' demonstration of flexibility, teamwork, initiative and delivery as it did to the delivery of their technical objectives;



- employee feedback was sought on the process, and incorporated into amendments for the 2010 process; and,
- the CEO drove the process, top down, role-modelling its implementation and clearly setting the expectation that this was a managerial responsibility which would contribute to organisational success.

Lessons Learned exercises are becoming increasingly important to us as we gain more experience in designing, building and deploying our machines. As part of the standard project close-out, we are formally conducting lessons learned exercises and embedding that information as quickly as we can into the next project. During 2011, we established a new R&D department to look at the longer-term development of components within our turbine to ensure that we are taking the learnings and systematically evaluating performance, cost and design for manufacture, commissioning and deployment.

Our now standard **Induction Process** ensures that we are integrating employees to maximise their impact on the business as quickly as possible. We spend significant time during the recruitment process to ensure that we have the right people on board. To make up for a lengthier recruitment phase, the induction process ensures

that new employees are ready to operate in their role by the end of week one. By the end of the first week, each employee has defined deliverables for the first 30 days. At the end of the 30 days, they then set full year objectives (based on department and corporate objectives).

Very early on in the company's development, we established important **links with key research departments** within a number of universities globally. This was primarily to ensure that we were getting the benefit of leading-edge thinking, whether this was from an environmental science/marine life perspective, or from a more technical perspective. We have established linkages with universities such as UCD, Ireland; Grenoble, France; Washington State, US; and Durham, UK, which gives us access to ground-breaking research. Being the leading technology developer in this space, we are in a position to direct and influence the type of research to be carried out to help further the industry more broadly – not just for OpenHydro.

CPD and our employees

Since 2010, the company has had a particular focus on CPD activity for all employees – but very specifically for the technicians and engineers across the company. The initial focus for CPD as an enabler for business growth was to address the identified skills gaps – i.e. financial awareness, project management and health and safety skills. These identified core skills for engineers operating internationally had to be addressed for our engineers to be able to deliver to the expectations of our clients – i.e. international utilities. During 2011, the focus has moved more towards developing for the future. As the number of our projects increases, we have identified the need now as we grow in employee numbers to develop a middle management cadre in the business – i.e. OpenHydro's future leaders. To that end, we have invested during 2011 in professional development programmes (Professional Progression Programme with Engineers Ireland), as well as supervisory/management skills programme for the broader group of middle management (including engineers and technicians). For 2011, we will have invested over two per cent of payroll in training and development initiatives, and we will have exceeded our commitment to average five CPD days per employee per year. Until 2010, we had developed our employee skill base primarily through recruitment of external experienced hires, due to the specific skillsets and expertise we required and the speed with which we needed to grow. Now, in 2011, with a larger team on board, we have been able to focus on developing the skills the business needs from graduate level. In 2011, we launched our inaugural graduate recruitment campaign to bring four new graduates into the business through our newly designed engineering graduate rotation programme. Having recognised that our most successful and valuable engineering resources have had exposure across almost all technical areas in the business, we agreed to formalise those experiences, and put a structure around it – ensuring that future OpenHydro leaders would systematically rotate around different areas of the business, sharing and developing their engineering knowledge along the way.

Commercial benefits

Our core engineering skillsets are manufacturing, mechanical, electrical and structural. From these skillsets, we have developed

a strong portfolio of patents around our electrical generator and the subsea gravity base, as well as for the installation barge. It is the combination of these skillsets, contributing to the development and operation of the entire turbine system, which sets us apart in the industry.

Supporting that, two key skills in the company have been instrumental in our success to date. Firstly, effective procurement; we have developed innovative partnerships with suppliers, which have allowed both OpenHydro and the supplier to learn about and develop the technology together. In addition, in dealing with the large international utility companies, we have demonstrated our ability to procure more cost effectively.

The second pivotal factor has been the establishment of strong corporate finance structures; our CEO and CFO have, since the company's inception, secured funding from a broad range of investors both in buoyant and challenging market situations. Their ability to do this is founded in a sound financial model, proven technology and demonstrated ability to deliver that technology both at test and commercial scale.

With these systems in place, we have been able to demonstrate success as measured against our corporate objectives:

- we have demonstrated design and build of turbines at scale;
- we have validated an innovative and patented deployment methodology;
- through technology advances, and innovations in the supply chain/procurement processes, we have significantly reduced the cost of energy; and,
- with the evident technology advances and cost reductions, translating into increased shareholder value, we were able to secure significant funding in spite of unprecedented economic conditions globally.

From a CPD perspective, none of this would have been possible without the unique blend of engineering and business skills and capabilities that exist across the team. Our CPD initiatives have enabled us to approach the development of engineering knowledge within the business in a speedy and systematic manner.

Our most significant achievement to date has been the design, build, manufacture (and, in September 2011) the supply of the world's first 16m open-centre turbine in France for EDF. This was particularly outstanding from our perspective as it involved replicating manufacturing processes to establish a new manufacturing facility in approximately three months. For the first time in the company's history, we operated a three-shift cycle over six months to complete the build of the 16m turbine. This was a huge advance on the previous commercial machine (10m in 2009), which also took six months to build. This demonstrated our ability to establish satellite manufacturing facilities and to manage the scale up of staff required to fast-track the build.

Our company successes to date have proven that in spite of extraor-