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Women in water

It's not just men maths and hard hats

Women in water

Are women in the hydropower industry treated any differently to their male colleagues?

We ask three women in high profile positions to share their views.

Would you agree that the water power and dams industry is traditionally male dominated?

TAMMY CHU: The workplace in the water, power and dams industry as traditionally dominated by men, and that’s mainly as a historic legacy of gender expectations affecting women’s career choices. While education systems are now encouraging girls into careers in STEM, we still see huge barriers, particularly with changes in education combined with gross diversity initiatives being led by employers, such as Hydro Tasmania.

Hydro Tasmania has a strong diversity and inclusion program that we want to be part of the solution to gender inequality and to the imbalances that persist in the sector. We want to ensure aspiring female engineers have a clear and confident career path. We need to know that engineering is not just a boy’s club, that a strong career is within their reach, and businesses like Hydro Tasmania will support them.

I joined the Hydro Tasmania group in 2000 as a graduate civil engineer. Over the 19 years I’ve been with the business I’ve held a range of different positions – civil engineer to project manager, business development manager, and manager of the water and environment group. Now, I am the Managing Director of the Hydropower and Water Consulting Business, Entura, which provides renewable energy and water solutions to clients across Australia and the Indo Pacific region. As an engineering Director at Entura, I lead change, plan business development, provide solutions for clients, and help other engineers with their careers.

At secondary school, I started to consider studying engineering because I was good at math and science; I also had a strong interest in owning and building things and finding solutions. I felt that engineering had a strong future and would allow me to contribute to long term positive impacts on communities. Through my university degree in civil engineering, I was able to develop the professional knowledge and skills essential for an engineer, and then achieved a graduate placement at Hydro Tasmania.

I had a good start to my career through a variety of work experiences at hydro Tasmania and Entura, and I found a great mentor who gave me advice, built my confidence and challenged me.

I was the first female president of the Tasmanian division of Engineers Australia, and I’m currently on the board of the Tasmanian Hydropower Association. I met two women on a board of 12 and Engineers Australia’s Civil Engineer Board. I am an MBA from Chifley Business School, a fellow of Engineers Australia, and a graduate of the Australian Institute of Company Directors.

KATE LAZARUS: Yes but this is changing. While we are not seeing that many female leaders of companies, we are seeing more women in non-traditional sectors such as engineering. More capacity and gender sensitive options need to be incorporated into operational plans for construction of hydropower projects for instance. In the beginning I did think the lack of gender related issues and the lack of women in my focus was a reflection of the fact that the private sector would be the challenge. Gender and social standards are global and facing the same challenges.

This is also why I joined the Aspen Institute’s Global Leadership Council as an Aspen prominent leader, where I am a change agent in the intersection of human rights and the environment, and over time it came apparent that the role of the private sector would vary to the uptake of environmental and social standards and paving the way for sustainable growth.

This is the work that the International Finance Corporation (IFC) has been doing as part of its standards and global best practices to address and manage project risks. I believe we can be more effective working within the private sector to influence development decisions by incorporating environmental and social standards in early stage development projects, prior to selection of projects.

It is only over the last seven years, and working more and more with the hydropower industry, that I have noticed gender related issues and the effect on me, the role that I am trying to play in IFC and the effects on the ground – particularly the lack of inclusion of gender in the engineering firms. The lack of gender diversity in the selection of professional women is a challenge. To address that confidence gap, I think it’s important that women are aware of all the different opportunities available to them in the industry.

SANDRA SHUSTER: I agree. The water power and dams industry requires a degree and training in engineering or other STEM fields – fields that were traditionally dominated by men due to gender stereotypes and societal norms. Women were not encouraged to go into these fields and with few female role models, it was not seen as a career option.

This is changing. Currently about 28% of STEM university students are women and in the technical fields where water power and dams is the number is close to 14%.

It is even a bit more complicated in the hydropower industry given the remoteness of many of the sites and the requirement to be onsite for months at a time. Previously, it was unheard of to find a woman engineer living and working at a hydropower construction site. I am proud to say that we have a female chief resident engineer at one of our hydropower project sites in Nepal.

Do you feel you are ever treated differently, or have to perform your job differently, because you are a woman?

TAMMY CHU: Personally, I haven’t experienced any impediment to my career due to gender. I’ve been fortunate that I’ve had a lot of champions along the way who’ve encouraged me. I wasn’t even expecting to apply for this role of Managing Director of Entura until a senior executive suggested that I should put myself forward. Those mentors pointed out opportunities and encouraged me to take them – and that’s a huge help for all people to realise their potential.

KATE LAZARUS: Yes, over the last seven years of working in the private sector, I am faced with working primarily with hydropower company staff. These are mainly men. In many cases I am the only female in the room and am often leading chairing business meetings. For activities that I conceived, for example, the Hydropower Development Working Groups in Laos, Myanmar and Pakistan, which has garnered numerous members, it is easier in other cases, as a participant or voice in advocacy, to avoid the visibility of the sector. It can be harder. It has taken time to begin to feel treated as equal.

SANDRA SHUSTER: I am an international development professional by education and training. I spent most of my career working in developing and post- conflict countries for development firms. In early stage assessments, this led me to a closer look and a deeper understanding of the challenges women and girls face, and the impact this can have on development projects.

By the most challenging project was managing a $50 million project in Afghanistan. As a woman managing for the Indo Pacific people, engaging with engineers and other technical staff from Afghanistan, I had two challenges to overcome in this ex-peace, gender and lack of engineering degrees. In order to conquer both I relied heavily on experience and relationships. I had experience operating in those kinds of environments and possessed strong program management skills. I also knew the client well, and I was able to build a strong team that delivered results in an incredibly dynamic environment.

I started working for an engineering consulting firm after I had my first and could not live and work where I was used to. I had a supervisor who advocated for me at every turn and nominated me for the company’s year-end award. I was able to leverage exposure to senior executives to get my ideas across, build my professional network, and to identify new opportunities in the field.

I have been very active in promoting women in STEM careers in conflict countries for development firms. I have an extensive background working in development and conflict countries for development firms, and I have an extensive background working in development and conflict countries for development firms. I have an extensive background working in development and conflict countries for development firms.

The engineering profession is still experiencing challenges in attracting students of both genders from schools and universities – so I’d encourage all students interested in STEM to consider a career in the rewarding field. We need to keep encouraging girls to choose STEM subjects and to keep their options open as their schooling progresses. Hydro Tasmania is reaching out to schools to inspire students about STEM with new education programs. Generation Hydro: It’s a great way to demonstrate to students how their STEM background can lead to rewarding careers.

It’s also vital that leading companies such as Hydro Tasmania, empower women to back themselves and chase their dreams. We need organisations and industry-level commitments to addressing the gender imbalance, such as ensuring that female-sponsors and male-champions encourage women and address barriers. That means developing effective organisational inclusion and diversity programs, and flexible working arrangements that can help to create change. Hydro Tasmania is leading the way in this area, with strong support for women in the workplace that goes beyond the rhetoric into tangible, practical actions.

KATE LAZARUS: I believe that there is a business case for gender diversity in the hydropower industry.

This is why we started the Power Women Initiative in Myanmar which we are starting to replicate in Nepal. This begins with research and capacity building followed by companies signing up to take on challenges to boost gender diversity in their companies. Powered by Women helps companies build business case for gender diversity promoting business growth, efficiency and other sustainability and diverse cultures as a viability and the gender gap in our companies and with communities we work in. We have identified areas in which companies can boost women leadership. We need to support women at all levels of the sector, particularly in leadership positions.
Women in water and technical jobs. For women in non-traditional jobs providing safe work environments at construction sites, ensuring respectful workplaces and ensuring women have access to child care facilities is key. Education is also key - supporting STEM programmes at early stages of development and enabling girls to engage in the same activities as boys.

Our findings show that hydropower businesses that have balanced gender ratios miss the boat on the benefits of diversity in the workplace - including access to talent, cost savings, team cohesion, innovation and improved community relations and risk management. Women and their households also miss out on good jobs and the incomes they bring. Many Asian hydropower firms do not want to play a catalytic role in advancing women in leadership positions and reap the benefits of gender diversity, but they lack locally grounded tools and experience. IFC currently has six companies that have taken up the Power of Women challenge so they can learn about the appropriate gender smart tools and approaches that are available to them.

SANDRA SHUSTER: Key enablers to getting more women in the industry are easily exposed to STEM. Role models and family support are important. But when girls are young, when they ask themselves how they can get into science and engineering, we need to provide them with role models, with STEM mentors they are able to identify with.

Many young women from the region who have had access to a good education have ambitions and a desire to succeed. But they say they are not only interested in finding a job, but also in making a difference to the world. They want to find a career that they can have a catalytic role in advancing women in leadership positions.

We must also address the issue of glass ceilings and lack of mentorship and sponsorship. Women who are in positions of power can help promote other women - senior women must be able to mentor junior women and ensure that they have the same opportunities as their male counterparts.

We also need to address the issue of leadership. Women need to be encouraged to step forward and take on leadership roles. This is particularly important in hydropower where there are still too many male-dominated positions.

TAMMY CHU: I think that many male engineers are very welcoming of female engineers and recognise that all workplaces are enriched, strengthened and better balanced through greater diversity. Diversity of thought and backgrounds leads to better outcomes overall.

Established engineers recognise that over the next decade the industry will need many skilled people, and that means that the profession must reach out. We must encourage women to be part of our industry and the possibilities for them are endless - they can really make a difference. In the world we are going to decarbonise energy generation in Australia and the world, we want to see this proportion of renewable energy.

Already we've seen rapid expansion of wind and solar, and the next big growth area is energy storage, such as pumped hydro, to make those renewables 'dispatchable'. My strongest interest and greatest satisfaction in my career has been working on sustainable engineering solutions to build a better future. Improving power and water infrastructure for communities is important - whether that's to articulate and recognise abilities that allow us to optimise each other's learning from each other in working spaces. It is important to learn how to articulate and recognise abilities that allow us to optimise each other's learning from each other in working spaces.

SANDRA SHUSTER: I do believe the demand is out there. The demand for skilled STEM talent is growing high and expected to grow. The US Bureau of Labor Statistics projects an increase of 1.7 million new jobs in the US between 2012 and 2022. Given that women earn 57% of all bachelor’s degrees in the US, the female STEM drop-off has a disproportionate effect on the job shortfalls of the national workforce and the broader ability of the United States to drive innovation and compete in the world market.

Women do want to be involved in the industry but often feel they don’t have the opportunities. A study by the Harvard Business Review found that women, more often than men, want to be more socially responsible and willing to work for a purpose to solve big problems and making a difference in people’s lives. Here at IFC we are keen to understand more about how we can support women in their careers and build their confidence and capabilities.

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SANDRA SHUSTER: In addition to the positive affects gender diversity has on the bottom line, the lack of gender balance in STEM fields limits workforce performance. Studies have shown that more diverse and inclusive teams consistently produce more creative and successful solutions to complex situations and are less likely to make significant mistakes than homogeneous teams.