

WOMEN IN CLEANTECH

The Future of Cleantech: Promoting Women's Participation

Catherine Bowers, Chair 'Women in Cleantech'

When women are disproportionately affected by environmental change, why is it that men are disproportionately responsible for the decisions which shape global responses? Access to, and participation in, both the debate and its solutions are at the root of why 'Women in Cleantech' was formed.

All over the World, women have long been involved at grassroots level initiating campaigns across a wide spectrum of environmental issues: against the effects of industrialisation on clean water supplies in the Aral Sea, in the Mediterranean, across the Ukraine and in rural Bangladesh; against the socially-damaging activities of mining and hydroelectric companies in Nitassinan, Canada; in the Bolivian 'water wars' which saw a million people mobilised on the streets of Cochabamba. Within communities, the voice is powerful; outside communities it fights to be heard, in the developed as much as the developing world.

Agenda 21, the Rio Declaration on Environment and Development, was adopted by more than 178 Governments at the United Nations' Conference on Environment and Development (UNCED) held in Rio de Janeiro in 1992. Its principles were then strongly reaffirmed at the World Summit on Sustainable Development (WSSD) at Johannesburg in 2002. This summit unequivocally positioned 'broad participation and inclusiveness' as key to the success of sustainable development. These principles were outlined in detail in Chapter 24 of the Agenda which clearly states that:

"Each body of the United Nations system should review the number of women in senior policy-level and decision-making posts and, where appropriate, adopt programmes to increase that number, in accordance with Economic and Social Council resolution 199/17 on the improvement of the status of women in the Secretariat."

It is safe to say, however, that this aspiration, in the UK at least, has seen little result. The most recent 'Democracy Statistics for Female ministers by Country' as published by the IPU¹ in 2001 puts the UK in 57th position with only 14.3% of its ministerial positions held by women. Despite the % of women MPs having increased from under 10% in 1992 to approximately 22% in 2010, analysis of the current Coalition Government shows almost no improvement in female representation: women holding

¹ IPU (Inter-Parliamentary Union). 2001. Correspondence on women in government at the ministerial level. March. Geneva

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ministerial responsibility now stand at just over 17%, a less than 3% increase in 10 years.²

These poor levels of participation are repeated in bodies with particular interest in the environmental sphere, both at Select Committee level and at the Department for Energy and Climate Change (DECC). Out of the 11 serving members on the Energy and Climate Change Select Committee, currently only 2 are women.³ At DECC, although the Permanent Secretary is female, its Secretary of State, two serving government ministers and Parliamentary Under-Secretary and all 5 of its Director Generals are male. In fact, of the 90 Senior Team posts listed in its organisational chart, only 23 of these are held by women with only 4 out of 21 at CEO/Director level.⁴

This is a representational imbalance that needs to be addressed and addressed at every level where decisions are made which affect our industrial future, starting in schools with the take-up of key subjects and continuing through higher education and into employment. The concern over the entry of girls into STEM (Science, technology, Engineering and Maths) subjects is an ongoing one which has been aired in a number of forums. In 2002, the Greenfield Report on Women in STEM stated that “the under-representation of women in science, engineering and technology threatens, above all, our global competitiveness. It is an issue for society, for organisations (as strategy and policy-setting agents), for employers and the individual.”⁵

One leading commentator in this sector, Dr. Rebecca Harding, Managing Director of Delta Economics (a research and development hub for the entrepreneurial and small business sector) made the point at a recent meeting of ‘Women in Cleantech’ that “There is a real and pressing need to encourage more girls into sciences at school, particularly the core areas of physics, chemistry and engineering – an area in which the UK lags woefully behind countries such as Germany and China.”

It is fair to say that this issue has been widely recognised and steps have been taken to address the problem. Following the Greenfield Report, and its very key concern that the increasing number of female students participating in STEM at school was not translating into increased numbers in the relevant workforce, a ‘Strategy for Women in SET’ was launched. This had a number of strategic targets, from providing a resource centre with dedicated funds to using governmental machinery to ensure good SET management within departments. Many of these targets have been recorded as met.

² www.parliament.uk

³ www.parliament.uk

⁴ www.decc.gov.uk

⁵ Greenfield S., Peters J, Lane N, Rees T and Samuels G (2002) - *Set Fair: A Report on Women in Science, Engineering and Technology for the Secretary of State in Trade and Industry*.

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In addition, many positive initiatives have developed around this strategy. The Smallpiece Trust, for example, works extensively with STEMNET (The Science, Technology, Engineering and Maths Network) and the WISE (Women into Science and Engineering) Campaign where the aim is to boost the prospects of students in England, particularly females who are currently underrepresented within STEM careers. Courses are run which, although not exclusively for women, deliberately target them: a Low Carbon Energy Challenge (previously run as Sustainable Energy Challenge) at Newcastle University and a Low Carbon Energy course with EDF at Exeter University are currently on offer. The Trust has also run an Energy Challenge course at The Robert Gordon University in Aberdeen which focused on wind, tidal and wave energy. Petra Hancock, the course administrator for the Trust told Women in Cleantech that “we aim to raise the awareness and profile of STEM subjects, specifically engineering, to young female students which in turn will hopefully lead to them realising it is not just a male environment and ultimately encourage them into choosing and studying related subjects, followed by university studies or apprenticeships in these areas.”

Despite initiatives like these however, women remain under-represented across STEM (with the exception of entrepreneurs) and little progress has been made in terms of employee numbers, across both the academic and business sectors: in 2007, only 18.5% of employees in the STEM sector were female, almost no increase over the 2002 figure of 18.1%.⁶ This is despite an increase of 8.4% in the number of girls taking STEM ‘A’ levels since 2004. Take-up therefore appears to be increasing at school-level but not translating into the workforce. The issue, in fact, appears to be one of very high levels of attrition for girls between the stages of engagement with STEM: some 76% of women with SET training are not working in the sector, compared to 51% of men.⁷ This, combined with a lower level of entrants available in the first place, leads to ongoing under-representation both within the sector and, therefore, within the wider debate and the decision-making process.

It is the opinion of the Evidence Paper that this situation has largely come about because of social factors: success within this sector can sometimes be perceived as requiring accepting and dealing with a very masculine environment rather than having the ability to challenge it; the gendered nature of this masculine culture seems to be self-perpetuating, women dropping out as they progress further up the ladder being a common pattern; although women are often entrepreneurs, there has been criticism of the amount of dedicated information and funding available; finally, there is often an image problem in this sector, where becoming an engineer, for example, can be rejected by girls as being both hard to do and hard to be.

So what is the solution? Clearly work to promote the take-up of STEM with school-age students needs to continue and the work of organisations like the Smallpiece Trust

⁶ National Policy Centre for Women’s Enterprise Evidence Paper: *Women’s Enterprise and SET*. Dr Rebecca Harding, Delta Economics, March 2009.

⁷ Ibid

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must be publicised and celebrated. Gemma Murphy, Head of Marketing and Development with the Trust, reported a teacher's comments from a recent STEM day which made very positive reading: "I would like to give you an update on the response by the pupils to the autumn Smallpiece STEM Day. Just after Christmas, the school had its options evening where the pupils made their choices of subjects to take in Key Stage 4. I am sure that the STEM Day was still in their minds. In normal years we just have enough pupils to run one Engineering group of Seventeen. But not this year. In fact we are this year running 2 groups of 22 students and have had to turn pupils away. But the very interesting thing is the number of girls that have opted to take Engineering some who are among the high flyers in the school. This I can only put down to the STEM Day."

This approach alone, however, is clearly not enough. Delta Economics, the authors of the Evidence Paper cited above, focus their proposed solutions around the need to promote female STEM entrepreneurship among students, supported by dedicated funding for women's STEM businesses. Others, including Mym Simcock, CEO of energy engineering firm Freepower Ltd, speaking at a 'Women in Cleantech' event to promote careers in the sector, have noted the idea that mentoring and negotiation skills, recognised as keys to executive development, should be taught in schools.

What is clear is that tackling gender-based inequality needs to be addressed by a wide-ranging programme of strategies which must form an essential part of the ongoing development and shaping of this industry to a point where representation is equal.

Effective participation in any industry requires an understanding of the sector and its different areas of opportunity: the pathways in, the experiences of those involved, the skills needed to progress and the challenges presented. Cleantech is no different. Whether it's raising finance, contributing to the Board, setting policy, finding a career path or acquiring skills, the sharing of ideas, experiences and best practices within a like-minded community can be invaluable.

At 'Women in Cleantech', we recognise that this is a critical time in the industry's evolution when funding, policy and development needs all the focus, collaboration and energy that a variety of different voices can provide. We also recognise that collaborative working, a key strength of many female executives, will be the key to the Cleantech businesses of the future; the traditional, more transactional, way of conducting business is changing. In this way, we hope to move Chapter 24 of Article 21 from a byword to a reality.

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About the Author: Catherine Bowers is a Director of ecoConnect, the UK's cleantech and green industry association and Chair of Women in Cleantech, an initiative to bring together women executives who work within the green and cleantech industry sector to promote innovation and growth. An educational specialist; she was previously employed by Glenys Kinnock as researcher/writer on a book (published by the National Union of Teachers) on education issues. Catherine's background in marketing includes new business development and project management with Post Office Counters Division and Top Shop. She is Deputy Head of English and International Baccalaureate Coordinator at the Windsor Boys' School. Catherine is a Manchester University graduate and has a Diploma with Distinction from Chartered Institute of Marketing.