

Women in Geothermal - WING: How the Drive for Equality Became a Movement

Andrea Blair¹, Aimee Calibugan², Catherine Coutts², Paul Siratovich¹, Abbie Dean¹, Sophie Milloy³, Juliet Newson⁴,
Charis Wong⁵, Anya Seward⁶, Trudy O'Halloran¹, Karl Spinks⁷, Emily Collis⁷

¹Upflow Ltd, PO Box 61, Taupo, New Zealand

²Mercury, 283 Vaughan Rd, Owata, Rotorua 3010, New Zealand

³Worley, 333 Collins Street, Melbourne, VIC 3000, Australia

⁴Reykjavik University Menntavegur 1, 101 Reykjavík, Iceland

⁵L'Institut National de la Recherche Scientifique (INRS), Quebec, Canada

⁶GNS Science, 114 Karetoto Rd, Wairakei, Taupo, 3330 New Zealand

⁷Western Energy, 132 Rakaunui Rd, Taupo 3378, New Zealand

andy.blair@upflow.nz

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ABSTRACT

Founded in October 2013 during the Geothermal Resources Council Annual General Meeting in Las Vegas Nevada, Women in Geothermal (WING) has now become the largest single geothermal association on the planet with over 1725 members from 68 countries and 25% of which are male (WINGmen) (at 1 November 2019).

A not-for-profit volunteer organisation, WING's mission is to promote the education, professional development, and advancement of women in the geothermal community.

The culture within the geothermal community is one of openness, friendship, and mutual respect. However, in the working environment worldwide unconscious bias still persists.

WING aims to have an effect on the geothermal industry where gender equality is the result. Our ultimate goal is that one day we won't need to exist.' (WING Roadmap to Iceland 2020)

WING members come together from a variety of disciplines that all contribute to the success of geothermal projects around the world; science, engineering, legal, regulatory, business, government, community leaders and other roles, to join in a global conversation about fairness and equality.

The origins of the 'WING Roadmap to Iceland 2020' (Roadmap) began during the World Geothermal Conference in Melbourne in 2015. WING Ambassadors from around the world met and discussed the vision and goals for WING. From there the WING Global Team, based in New Zealand, created the Roadmap. This has been the guiding document for the organisation, providing focus on specific targets, practical activities, and themes that underpin the organisations work.

Workstreams are based on achieving global goals through local implementation, that is, WING Country Teams performed activities and initiatives that are relevant to local conditions, issues and opportunities, and that also support the global WING goals.

A 'doing' organisation that has focused on tactical and practical activities, a focus on the inclusion men in all levels of the organisation, a willingness to challenge bias, to initiate a conversation on diversity, with support from industry leaders and organisations, and the seemingly endless supply of human energy and goodwill, has resulted in a shift in culture within the global geothermal community to an increasingly inclusive and more fair place for women.

This paper will discuss the growth of WING from an idea to a global movement, including insight into the underpinning strategic considerations and philosophies, as well as statistical and anecdotal evidence of a positive change that is providing inspiration to not only women, but the whole geothermal community.

1. INTRODUCTION

Women in the geothermal industry still face major challenges; lack of leadership roles, unequal pay, and a lack of female leadership roles and mentors. As a part of their mission WING hosts networking events, awards ceremonies, and organizes mentoring programs to develop a stronger female presence in the geothermal industry. (Think Geoenergy, 2016)

Women in Geothermal (WING) was the brainchild of Elise Brown and Bill Glassy from the University of California Davis, United States. In October 2013, along with a small group of supporters, hosted approximately 80 people for the inaugural WING event at the MGM Grand in Las Vegas. The event coincided with the Geothermal Resources Council Annual General Meeting.

Shortly after the inaugural event, Andrea Blair (New Zealand) was appointed the Global Chair and was tasked with the development of a strategic and tactical plan to realise the WING mission; the promotion, education, professional development, and advancement of women in the geothermal community.

A group of women working in the NZ geothermal industry gathered and formed the initial WING Global Team; Abbie Dean, Juliet Newson, Sophie Milloy, Susan King, Anya Seward, Trudy O'Halloran and Charis Wong. This group was later joined by Aimee Calibugan, Catherine Coutts, Karl Spinks, Paul Siratovich and Emily Collis, who complete the WING Global Team.

The first workstream was to develop the structure of WING; ensuring that there was alignment between global goals and local implementation. WING Ambassadors were engaged; these were influential women working within their countries geothermal industry who were passionate about the WING mission.

Then at the WING Ambassadors meeting during the World Geothermal Congress in Melbourne in 2015, the vision, goals and aspirations for WING were discussed. This was the basis of the guiding document 'WING Roadmap to Iceland 2020'(Roadmap). The WING Global Team created the Roadmap, providing focus on specific targets, practical activities, and themes that underpin the organisations work.

Once developed, the focus went to implementation of activities and initiatives aimed to achieve the targets within the Roadmap.

Founded as a forum to support, promote and advance women in the industry, the group pushed forward to establish itself as a fully-fledged geothermal association with big plans. Now WING is the single largest geothermal association in the world with 1725 members (1st November 2019) from 48 countries and is an institutional member of the International Geothermal Association.

2. STRUCTURE

The structure of WING is based on global connection and communication (Figure 1). The intention that each Country Team thinks global, but acts local, placing focus and emphasis on the elements of the WING Roadmap and philosophy that are most relevant to their country.

WING is led by the Global Chair, who is responsible for leading the vision and direction of WING, ensuring the Global Team activity is focused on outcomes and aligned with mission, values and culture.

The Global Executive is responsible for the management and operation of the organisation and leads the Global Team.

WING Country/Regional Ambassadors are selected to represent countries/regions that actively participate in geothermal energy development. They build WING Country Teams to support, coordinate and deliver WING initiatives in their territories. This ensures WING remains relevant and engaged with the domestic industry, whilst connected to international communities.

Members from locations that don't have local WING teams are engaged through the Global Team.



Figure 1: WING Organisational Structure

2.1 WING Country/Regional Teams

Current WING Country/Regional Teams are located in the following locations as at November 2019: New Zealand, Iceland, United States, United Kingdom, Turkey, East Africa, Denmark, India, Colombia, El Salvador, Mexico, Chile, Caribbean, Indonesia, Philippines, Canada, France, Japan, and Netherlands.

Bolivia and Peru are currently working on building their country teams.

2.2 Members

Members come from a wide group of professional disciplines. Not just traditional science and engineering, but also legal, regulatory, business, financial, government, etc., as well as those involved in the different uses of geothermal energy eg. Tourism, Cultural, etc. WING engages with all those that enable and drive geothermal projects. In order to become a member, there needs to be an obvious link or interest in geothermal energy.

3. CULTURE

3.1 WING Values

Developed by the WING US Team, the core values of the WING organisation are to be courageous, empowering, open and caring (Figure 2). These are the values that we strive to promote as an organisation and to encourage our membership to be. Through these values we aim to break down barriers, encourage women to reach their full potential, to go after what they want, to not be afraid to ask for help, to become more visible, and to believe in themselves.



Figure 2: Outline of the core values and attributes of the WING association.

3.2 Communications

WING members connect mainly via social media – Twitter (@WING_geothermal), Facebook group page (Women in Geothermal – WING), Linked In group (Women in Geothermal (WING)). Some country teams have their own social media sites eg. WING Indonesia Facebook page. Members are encouraged to post in their own languages, in order to remove barriers from participation. The majority of communication is, however, done in English.

The WING website (updated regularly by the global team) houses all the information about WING and how to become a member www.womeningeothermal.com.

Local networking events and meetings, training, workshops, exhibitions at conferences and speaking engagements are delivered by WINGs to increase the visibility of WING and promote the work done.



Photo 1: Members of WING Turkey at geothermal event (Credit: Ayşegül Turan)

4. DEVELOPING A STRATEGY

The WING Roadmap to Iceland 2020 (Figure 3) is WINGs action plan, it outlines the WING themes, goals and plan to achieve them by the World Geothermal Congress 2020. The intention is that the Roadmap will stimulate the thoughts and discussions within member organisations and encourage activity toward the pursuit of gender equality. The World Geothermal Congress was selected as a good place to gather and review progress and set new goals for the next phase.

4.1 Roadmap

The WING Roadmap to Iceland 2020 (Roadmap) is based on four underlying themes and corresponding goals:

4.1.1 Connect:

- **GOAL: 1500 members.** WING wanted to engage with all those that enable and drive geothermal initiatives. It was important that a conversation with WING is a global conversation. WING prides itself on strong communication; as a forum to connect and engage. The WING community is connected across the world and seeks to inspire and empower. Members are encouraged to engage and connect with role models, to share experiences, insight and to create a support network
- **GOAL: 50% WINGmen.** It is important to have a meaningful proportion of WINGmen. They make up 84%3 of the geothermal industry (International Geothermal Association membership, 2015), and hold the vast majority of leadership positions. Without the support of men, its unlikely meaningful change will occur.
- **GOAL: One WING group in every geothermal country**



Figure 3: WING Roadmap to Iceland 2020 cover

4.1.2 Inform:

- **GOAL:** Identify barriers for women's advancement in the geothermal industry. WING strived to understand how the community operates, including its culture, and traditions. We want to determine how these factors perpetuate and support existing bias against women. However, little information is publicly available on geothermal gender statistics.
- **GOAL:** Be the industry resource for gender equity solutions. WING will invite industry to share gender data and equity initiatives; identify opportunities where changes can be made, and; drive solutions that will lead to positive outcomes. Monitoring gender equality performance in the community, to measure progress and identify areas for additional focus, is ongoing work for WING.
- **GOAL:** Monitor gender equality performance.

4.1.3 Advance: Advancing is about overcoming bias and being courageous.

As noted by World Bank Group (2018), geothermal projects employ mainly men for both skilled and unskilled jobs, and the technical jobs consist mainly of engineers, geologists, geochemists and geophysicists: "Therefore, women are far underrepresented in positions of influence, decision-making, or team-leading in the industry." The reasons for this include those outlined above as well as "the inertia from more than a century of power sector labour segregation." (Brotheridge. 2018)

- **GOAL:** Have more women in high profile positions. WING wanted to advance the talented pool of women and have more women influencers in the places that matter. WING encouraged members to:
 - Join the boards of national and international geothermal associations;
 - Speak and present at geothermal events;
 - Become mentors;
 - Lead projects and initiatives, and;
 - Actively seek promotion and recognition. Campaigns will be used to encourage a shift in thinking; empowering women to chase their aspirations.
- **GOAL:** 50% of International Geothermal Association WGC2020 fellowships awarded to women.
- **GOAL:** Be recognised, through awards, as an energy sector of successful women.

4.1.4 Visibility: Be visible and inspire. It's important that other women see women up front, in positions of influence, making decisions and leading. It is hoped that this will encourage them to step into these roles too.

4.1.5 World Geothermal Congress 2020

The goals for the WGC2020 event include:

- 50% female session chairs
- 50% more female presenters than WGC2015
- 50% more women attending than WGC2015
- At least one woman on every expert panel

WING activity at WGC2020:

- Homestay/billeting programme for WINGs whereby they stay in the homes of Icelandic WINGs
- Networking event
- WING Ambassadors meeting
- WING Future Leaders event

5. KEY RELATIONSHIPS

5.1 Global Partnerships

The WING Global Partnerships are a vehicle through which organisations can support the efforts of WING and engage with the WING community. Global Partners are sought and activities are undertaken that align with WING themes. Partners are more than simply funders, they are actively engaged and committed to empowering women and removing barriers within their own organisations and those they work with that prevent the inclusion of women.

WING has two current Global Partnerships; Seequent – WING Global Visibility Partner and Contact Energy – WING Global Advance Partner.

5.1.1 EXAMPLE: WING/Seequent Global Visibility Partnership

Seequent is a global leader in the development of powerful geoscience analysis, modelling, and collaborative technologies. “Our solutions enable people to uncover valuable insights from data, creating rich stories and ultimately make better decisions about earth, environment, and energy challenges. A team of over 350 people including, geoscientists, engineers and researchers, in 18 locations around the world, are creating innovative technology solutions, for a better future.” (Seequent, 2019a).

Seequent became the first Global Visibility Partner for Women in Geothermal (WING) to help raise the visibility of women in the industry and to inspire others. The announcement was made at IGC 2018, the 4th Iceland Geothermal Conference in Reykjavík, at an event co-hosted by WING and Iceland’s Women in Energy (KIO).

Graham Grant, Seequent’s Chief Operating Officer, says: “We’ve been long-time supporters of WING and their mission to support women in the geothermal industry to reach their potential. Visibility has an important role to play in helping achieve this. We saw this partnership as a fantastic opportunity to work with WING to support a number of global visibility initiatives, the first of which is the scholarship.” (Seequent, 2018)

“We’re delighted to have Seequent step up and support WING as our Global Visibility Partner. Women need to be visible, in positions of influence, making decisions and leading, and serving as role models for those wanting to step into these roles too. We thought it was a really good fit to have Seequent as our partner in this area given their Leapfrog Geothermal software, used by many in the industry, provides the tools to enable visualisation and provide clarity.” Andrea Blair, WING Global Chair.



Photo 2: 2018 Global Visibility Scholarship winner Rocelle Mendoza, Geophysicist, Energy Development Company, Philippines with Jeremy O’Brien from Seequent at Hobbiton, Middle Earth, New Zealand. (Credit: Jeremy O’Brien)

Seequent will fund a WING member each year to attend a global geothermal conference and present a research paper. In 2018 30 responses were received from WINGs around the world. Applicants were asked to submit a technical abstract and provide commentary on why visibility is important for women. The calibre of technical abstracts was extremely high and the commentary on why visibility is important was insightful. It proved to be a tough selection process. Eventually the winner, Rocelle Mendoza (Photo 2) from the Philippines was awarded the scholarship.

Rocelle was able to present her research at the 2018 New Zealand Geothermal Workshop. Whilst in New Zealand Rocelle engaged with industry leaders as well as travelling to Christchurch to meet with the Seequent Team.

At the end of her presentation Seequent Rocelle shared an inspiring message: “It can be scary to be a woman in a male dominated industry. But I’d like to tell the women of my generation that it’s okay. It’s okay to be scared. It’s okay as long as you don’t let that fear consume you and stop you from trying. Let the fear challenge you so that you’ll try... and find out you can do it.” (Seequent, 2019b).

5.2 KEY COLLABORATORS

5.2.1 EXAMPLE: The World Bank

The World Bank’s Energy Sector Management Assistance Program (ESMAP) is providing leadership in the geothermal gender equality and inclusion space releasing the Gender Equality in the Geothermal Energy Sector Report in May 2019.

Although geothermal energy is globally recognized as a clean and reliable source of heat and electric power its development can inadvertently lead to adverse outcomes that disproportionately disadvantage women. Based on good practices and lessons learned,

this report introduces ways that geothermal projects can mitigate risks and pursue opportunities to address gender gaps within the project cycle. (ESMAP, 2019)

The report provides guidance on how to include specific monitoring and evaluation indicators in the results framework for geothermal projects that measure progress toward closing gaps between men and women. In addition, the report contains an overview of guidance and toolkits developed, selected global case studies, and other resources so that project teams, governments, and geothermal developers have additional guidance on hand to prepare more equitable projects. (ESMAP, 2019)

ESMAP held the Gender and Geothermal Development Workshop in Guadeloupe on March 25-27, 2019, with the aim to strengthen understanding of geothermal development and gender entry points in geothermal operations of energy sector colleagues and other key stakeholders in the Caribbean. Energy sector members and key stakeholders from Dominica, St. Lucia, Guadeloupe, St. Vincent, Montserrat, St. Kitts & Nevis were invited to participate. Alongside their ESMAP and World Bank colleagues' international speakers included; Erla Hlin Hjalmarsdottir (Iceland Directorate for International Development Cooperation), Marit Brommer (International Geothermal Association), Meseret Teklemariam Zemedkun (United Nations Environment Programme), Judith Ephraim (Organization of Eastern Caribbean States) and Andrea Blair (WING).

Participants (Photo 3) were provided tools and thinking to consider, engage and include women in geothermal projects. Additionally, the WING Caribbean Team, led by Charlin Bodley (WING Caribbean Ambassador), was launched at this event.



Photo 3: ESMAP Gender and Geothermal Development Workshop, Field trip, Guadeloupe, March 2019 (Credit: Melissa De Freitas)

From this further engagement has led to WING and World Bank collaboration. Three of these activities coincided with the 6th annual Geothermal Congress for Latin America (GEOLAC) held in Santiago, Chile from July 17-18, 2019. Participants from across Latin America, North America, Asia-Pacific and Europe attended this conference. This included a range of experts from finance, policy and technical backgrounds, multilateral and bilateral development organizations as well as significant international and regional geothermal operators and developers.

With the World Bank's support WING participated in plenary session: The Current Power Surge in the Geothermal Industry. This session highlighted the status of women in geothermal globally. It began with a presentation by Andrea Blair, which illustrated the regional distribution of WING chapters, the issues facing women in the industry and the plan forward for the WING organization. After this presentation, a panel discussion was held, chaired by Michelle Ramirez Bueno of Mexico with panellists that included Laura Berman of the World Bank, Natascha Nunes de Cunha of the Inter-American Development Bank, Carolina Wechsler of Transmark Chile, and Andy Blair of WING.

A pilot of the condensed version of the WINGman special task force took place at the New Zealand Embassy (Chile) on July 19th, 2019. The WINGman special task force is a WING initiative that aims to give men the tools to support their female colleagues and provide robust discussion aimed at delivering change and actions in the workplace.

This pilot was the first of its kind in Latin America. The workshop included the background of WING, why men should participate in helping achieve gender equity, as well as some tools and techniques that men can use to aid their female colleagues to be heard more, seen more and increase their participation in important discussions. The presentations were well received and followed by robust discussion with representatives from Ormat (Latin America), El Salvador, Costa Rica, Peru, Nicaragua, Guatemala, Chile and New Zealand.

On Friday 19th a meeting hosted by the Ministerio de Energía (Chile) was held to discuss interest in improving gender equality in the Chilean geothermal industry. The meeting was scheduled as part of the "Energía +Mujer" program led by the Head of Gender in the Ministry of Energy, Marcela Zulantay.

Representatives from WING, World Energy Council, Transmark, Energy Development Company, Geothermal Resources Council, Canadian Geothermal Association, NZ Embassy, and NZ Trade and Enterprise spoke to existing works going on inside their organisations, provided insights and commentary on thinking and other initiatives, and shared ideas on possible next steps (Photo 4).

A 'helpful and inspiring meeting', connections and ideas generated at this meeting are likely to have ongoing impact on the gender equality of the Chilean geothermal industry.



Photo 4: Marcela Zulantay Alfaro, Encargada Oficina Planificación y Control de Gestión, Ministerio de Energía, Gobierno de Chile

There is natural alignment with the objectives of the World Bank and WING's mission to empower women. It is hoped that this collaboration will continue and have continued positive impacts on the women working with and in geothermal projects around the world.

6. SUCCESS STORIES

6.1 WINGMAN Special Taskforce

WING has benefited from significant support from men in the geothermal industry. Men from these organizations are sometimes unsure of what they can do to support their female colleagues. Thus, in 2016 the WINGmen Special Taskforce (WST) was created to provide a platform that engages men in the conversation around gender equality and gives them the tools to act to make meaningful change. These toolkits provide an understanding of the effects of unconscious bias, provides insights into current thinking around diversity, and provides tools and advice on how to better support their female colleagues.

The aim of the WST is to provide the means to affect change of the gender status quo inside geothermal organisations. Through challenging the harmful, traditional perception of male and female roles, the WST aims to eliminate gender stereotypes and encourages men to be role models, champions, and advocates of gender equality.

6.1.1 Pilots

In 2016, and in partnership with Mercury (NZ), the first WINGman Special Taskforce was delivered. For two hours per month over 10 months, ~15 men from different levels, ages and areas of expertise gathered to test the initial tools of the WST.

These discussions were delivered in an informal, open and relaxed manner that encouraged discussion in a safe working environment. With both a male and female presenter running the workshop, both sides of the conversation and perceptions were provided. In February 2019, the second WST began with another 15 men to continue to improve the conversations, awareness and tools to allow men to help overcome the present gender status quo.

6.1.2 Topics

The main topics covered by WST sessions include:

- **Language:** The importance of the language we use, how media speaks about women, what subliminal and overt messaging are women receiving and how different it is for men.
- **Introducing Unconscious Bias:** Types of unconscious bias. Recognising, identifying and minimising unconscious bias.
- **Unconscious Bias – Gender bias:** Recognition and identification of the barriers that prevent inclusivity and increasing awareness of opportunities to increase diversity. When and how to speak up when gender bias becomes apparent.
- **Family:** The impact that paternity and maternity leave, sharing family and household obligations and other home activities have on a woman's ability to fulfil their potential.
- **Safety:** How women experience the world differently than men and what can be done to help make work environments safer.
- **Company:** Identifying potential barriers in company policies, processes and culture that inhibit inclusiveness and diversity as well as implementing improvements.
- **Ideas:** Separate sessions where participants bring in their own ideas, initiatives or things they can do in the workplace. This could include ensuring that their procurement includes a requirement for contractors to have a gender/diversity/sexual harassment policy before they will hire them.
- **Scorecard:** Assess the gender equality/inclusion activity in the organization. Use as a baseline and review in 12 months to see impact and promote action.

6.1.3 Results

From the very first WST session, the work culture began to change; women were being included and listened to in conversations, they were spoken over less in meetings, and their contributions were being more valued. Language in training manuals, reports, presentations and the like were changed, and inappropriate or unhelpful commentary was called out and spoken against. The WINGmen actively sought ways to support and lift-up their female colleagues. Unprompted positive feedback was received from

women inside the organisation. The everyday work culture changed. This success bred greater success, as others adopted and modelled the behaviours they have seen demonstrated by their colleagues.

Every member of the initial WST group continues to be proud ‘super-advocates’ for gender equality, and whilst some have moved to other locations and industries they actively lead and model behaviours that support their female colleagues.

Whilst the second WST has only recently begun, they are engaged, challenging the perceived norms, participating in difficult conversations, and willing to implement proffered tools that encourage female inclusivity.

6.1.4 The Next Steps

Due to the success and effectiveness of WST pilots, WING aims to take the WST to the wider geothermal community and instigate a global cultural change led by men. The World Bank’s ESMAP group is helping WING do this by supporting the deployment of the WST ‘Train the Trainers’ workshops. Whereby individuals will learn how to deliver WST workshops in their home organizations.

A WST ‘Train the Trainers’ 4-day workshop was held in El Salvador and Mexico in December 2019. Participants included male and female teams from local organisations and the WING Ambassadors from both countries; Roselle Escobar (EL Salvador) and Michelle Ramirez Bueno (Mexico). A lead organisation from each country, La Geo (EL Salvador) and la Comisión Federal de Electricidad (CFE)(Mexico), hosted the events and provided local support. The New Zealand Embassy (Mexico) provided additional support in Mexico, and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) supported participants from around the region to attend the El Salvador workshop.

Participants undertook a concentrated WST workshop, as well as guidance on how to deliver WST training. They were provided with the materials, insights and support they needed to return to their home organisations and deliver WST workshops. Participants continue to have ongoing coaching and support from presenters.

The ‘Train the Trainers’ workshop has been refined, the materials have been developed, and the focus is on replicating it in more geothermal countries.

6.2 WING EL Salvador

Starting in 2017 WING EL Salvador now has over 150 members. They are a shining example of how WING can support local groups looking to lift-up women in their industry. Led by a small group of enthusiastic, industrious and smart women, WING EL Salvador is an active group that is continuously engaged in empowerment workshops and training to connect and empower their women and educate their male colleagues.

The WING EL Salvador Team: Rosell Escobar, Elizabeth Torio Henríquez, María Inés Magaña, Bertha Arenivar, Tania Muñoz, Luz Barrios Martinez, Claudia Herrera, and David López.



Photo 5: WING EL Salvador (Credit: Rosell Escobar)

WING EL Salvador is a great example of how men can have a positive impact on the inclusion of women. David Lopez (Photo 6), ex-President of Grupo CEL, the first WINGman of El Salvador, and WING EL Salvador Team member, is a proactive leader focused on lifting-up women. This is demonstrated through activities he has initiated:

- Commercial coffee and cacao operation that employs 600 local women. The cooling tower condensate from Berlín geothermal power plant is used to water plants.
- Wider reforestation program 3,000 people employed (70% women) to plant 6 million trees
- Empowers women in geothermal power plants to perform activities traditionally performed by men. Female participation in geothermal plants has grown by 20% since his arrival
- Sought to sign an agreement with El Salvador’s Ministry of Education to support WING women who have not finished high school
- Created specialized nurseries for the children of LaGeo employees
- The first ever women in geothermal session held during the Latin American Energy conference in San Salvador in August 2018.



Photo 6: David Lopez, President of Grupo CEL, and Vida Project workers (source: www.cel.gob.sv/exitosa-ofensiva-ecologica-del-proyecto-vida/)

6.3 Full Steam Ahead Documentary

The project sets out to document the professional lives and experiences of women working in the geothermal energy sector in five different countries: Iceland, Kenya, Ethiopia, Japan and New Zealand. This is social science research based on audio-visual qualitative data in the forms of interviews and video footage. The primary objective of the proposed study is to document women's stories within the geothermal energy sector and emphasize the importance of women's participation in the transition to a green economy. (Muska, 2018).

The research is innovative and rests on analysis of semi-structured interviews and visual ethnography of social interactions between the documentary subjects (women) and their work environment (Given, 2008).

It highlights contextual differences and the fact that full gender equality has not been reached in any of these countries within the sector. Fieldwork and filming was completed in 2016-2017, and the collected data is being analyzed for further research, development of the story line and edited for showing.



Photo 7: 'Full Steam Ahead' filming at ARGeo 2017, Thecla Mutts and film crew

Full Steam Ahead gives a rare insight into lives of pioneering women who broke the gender barriers within male-dominated industry. Firsthand personal stories of different generations of women and their experience, their fight for their rights and equality and the changes they have seen during their working-life within the geothermal industry.

6.3.1 Project partners

Funded by the Icelandic government, the Full Steam Ahead Documentary project partners are as follows:

- Bless Bless Productions is an independent documentary film production company founded in 1996 with offices in New York and Reykjavik, Iceland. Run by Susan Muska and Greta Olafsdottir, Bless Bless specializes in productions about gender, women and human rights and has received international awards and acclaim for their films.
- United Nations University Gender Equality Studies and Training Programme (UNU-GEST) uses multidisciplinary approaches to promote gender equality and social justice through high quality, collaborative and policy-relevant research, capacity building of professionals, scholars and organizations and the creation of a platform for transnational dialogue and knowledge exchange.
- Women in Geothermal (WING)

6.3.2 Emerging Themes

During interviewing and filming women from different countries and cultures in the geothermal industry that, in spite of the many differences, there are some common themes that emerge in our observations and conversations. A few of these common themes can be stated as being (Muska, 2018):

- The difficulty of women being sent for higher studies that would qualify them for work in the geothermal sector;
- The popular sense that women are not meant to study STEM subjects;
- The critical importance of support from their families for women to go for higher studies, take up STEM subjects, and work in a field like the geothermal industry;

- The familial pressure for women to choose marriage over career;
- The pressure on women to balance their time with their families with the time spent working;
- The difficulties faced by women with children, especially, when it comes to going out of town on work;
- The challenges women face at work in terms of infrastructure provided for women;
- The harassment and discrimination that women face in their place of work in terms of sexual harassment as well as being overlooked for promotions and other opportunities to further their careers.

A shortened version of the Full Steam Ahead documentary will be shown during the World Geothermal Congress, April 2020, Iceland.

7. NEXT STEPS

After a rigorous process, WING United States (US) has been awarded the prestigious role to be the WING Global Team for 2020-2023. The strong foundations built by the current Global Team (WING NZ) will serve as a platform for WING US to launch into the next evolution of the organization. (Think Geoenergy, 2019)

WING US Team: Kelly Blake (US Ambassador), Bridget Ayling, Karen Christopherson, Cary Lindsey, Mary Mann, Ann Robinson-Tait, Drew Siler, Caity Smith, Andrew Tiedeman, Kate Young, and Azadeh Riahi.

The next WING Global Team is tasked with developing and implementing the next global strategy, working with the individual WING Country Teams to and will deliver local initiatives that have impact in their own communities.

Changing the countries that will serve as the home of the WING Global Team will enable the different social political and business cultures of the host country play a key role in shaping the future of WING. As a global entity, WING needs to evolve to stay relevant and bring value to its members. Each country that takes the Global reins is in the unique position to have real impact on the lives of women and men in the geothermal industry across the globe.

The official handover will occur during the World Geothermal Congress in Reykjavik, April 2020.

8. KEY LEARNINGS

Key learnings include:

- A small group of determined people can change the culture of an industry
- Energise others to act
- Don't focus energy trying to convert those that are determined to not understand. Focus on those that do. Others will get on board when we create a world where they're forced to.
- Human energy is the most precious resource – use it wisely
- Don't be too rigid; be prepared to pivot and take advantage of opportunities
- Connect with others and align with their resources
- People generally want to help make the world a fairer place, they just need the tools and the opportunity
- We need the men; we need them to stand up and fight for the women and girls in their lives.
- No-one is immune to imposter syndrome
- People's lives aren't just work, or just home – its multilayered and growth happens in all the layers at different rates over time
- WING survives on the goodwill of others who have some grey space where they can make things happen
- We need people to engage and do small things to have a great impact – every small step is a small step forward

9. SUMMARY

WING truly can provide a global perspective. WING is connected not only horizontally across the globe but also vertically through the management and leadership hierarchy within countries. Many WING members are also members of their home country associations and we support members to continue to play key roles in those groups.

What started as a small group of people with a shared interest in creating a more equitable place for women has become a global movement with impact and influence.

Ultimately, WING's greatest goal is that one day it won't be needed.

10. ACKNOWLEDGEMENTS

To the brave and thoughtful individuals who have supported and participated in WING; don't stop now. The journey has just begun.

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