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Women in Power System Transformation
Advancing Gender Equality in a Changing Power Sector

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Gender Inequality in the Power Sector

80% of global **water and energy utility jobs** are held by **men**.

Women's **representation on power utility boards** and leadership teams **grows just 1% every 3 years**.

It could take as long as **72 years to reach 40 percent women leadership** in this sector.

The power sector is where the rubber meets the road for whole-of-energy system decarbonization.

As **countries around the world raise their ambitions to transform their power systems and integrate higher shares of renewable energy, there is a risk that women, and the skills they can bring to bear, will be left out of the clean energy transformation.**

Women in Power System Transformation



Develop knowledge and skills on cutting-edge technical topics



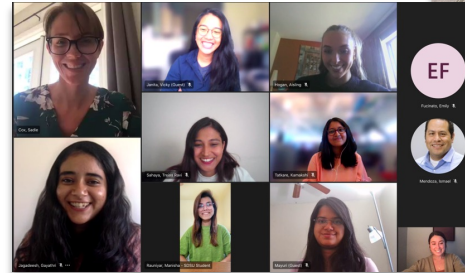
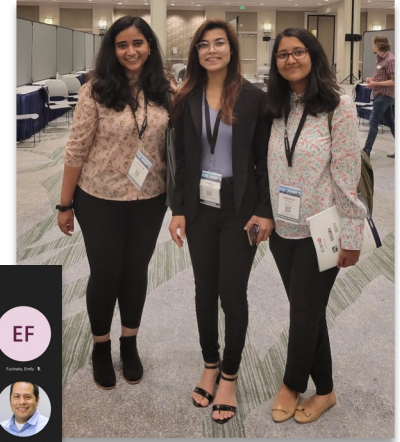
Agency-based empowerment of women to lead transformational change



Address engrained institutional barriers to women in power sector technical and leadership roles.



Build a support network to expand women's access to professional opportunities

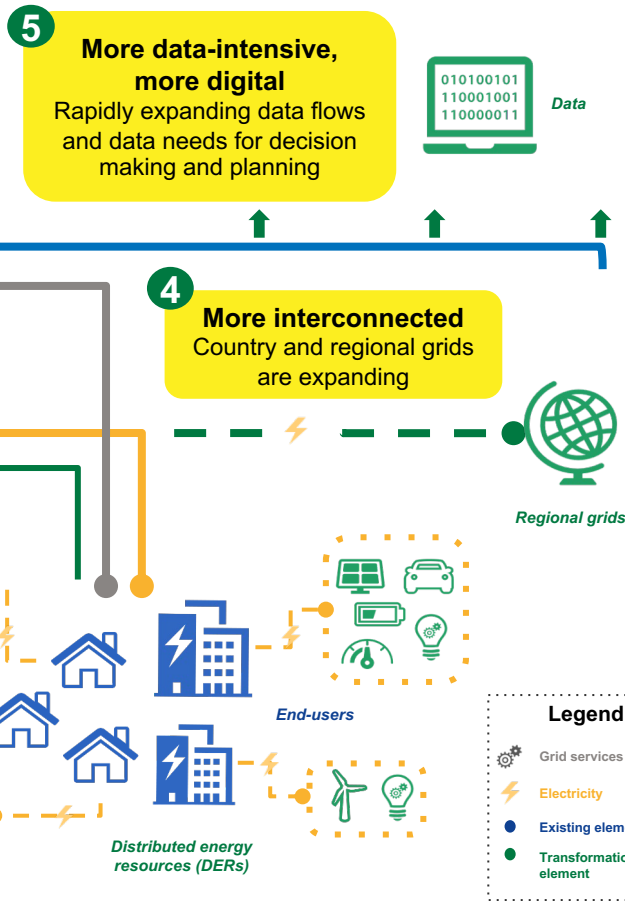


“...Becom[ing] the first woman intern in CAISO (California Independent System Operator) from PT PLN (Indonesia) made me realize that I can do what I thought impossible.”

Fellowships at leading system operator institutions to build technical capacity



- Balance electricity supply and demand
- Integrate new technologies and resources (e.g. renewables)
- Develop forecasts and plans for the evolution of electricity grid
- Establish market rules and grid codes
- Manage and evolve electricity markets for least-cost operations
- Ensure safety and reliability of the electric grid



1 More renewable
Growing penetration of new, variable renewables displacing conventional generation for power and increasingly grid services

3 More dynamic
Bidirectional flow and more varied, distributed resources causes more complex grid networks

2 More distributed
Rapid deployment of DERs (solar, storage, EVs, smart-grid, etc.)

4 More interconnected
Country and regional grids are expanding

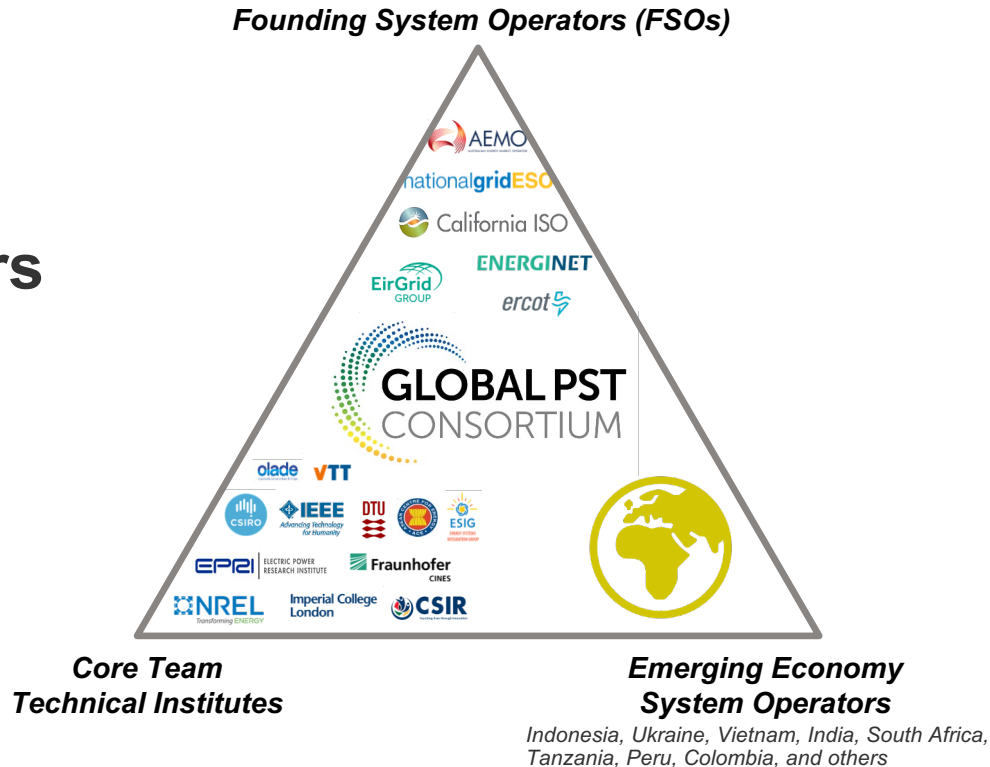
5 More data-intensive, more digital
Rapidly expanding data flows and data needs for decision making and planning

Legend

- ⚙️ Grid services
- ⚡ Electricity
- Existing element
- Transformation element

Women in PST Partners for Technical Training, Fellowships and Internships

Partners



Agency-based Empowerment and Addressing Institutional Barriers

SEE Change Approach

Our approach is centered on three pillars:

EVIDENCE

Build the evidence base and understanding of personal agency as a central force in human flourishing and how to foster this in individuals living in resource-poor settings.

PRACTICE

Scale what works for bringing personal agency approaches to individuals, groups, and organizations.

INNOVATION

Test powerful solutions and lead innovations in research and practice to support thriving individuals and resilient communities

Workforce Gender Equality Accelerated Program

[Home](#) > [Engendering Industries](#) > [Workforce Gender Equality Accelerated Program](#)



Cutting-edge, Women-led Teaching Materials

Women in PST, with leadership from Imperial College London, published [university teaching materials](#) to expand access to cutting-edge technical training and support upskilling of women students and practitioners around the world.

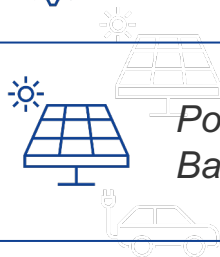
- Designed and taught by leading women experts
- Available at no cost to universities and instructors around the world
- Easy adoption into existing curriculum
- Flipped classroom format
- Paired with motivational media resources to encourage younger women to take up high-impact power sector careers

Additional course materials will be made available in October 2023.

Course Topics Made Available in 2022:



Declining System Inertia and Dynamic Reserve Requirements



Power System Stability with 100% Inverter-Based Resources (IBR)



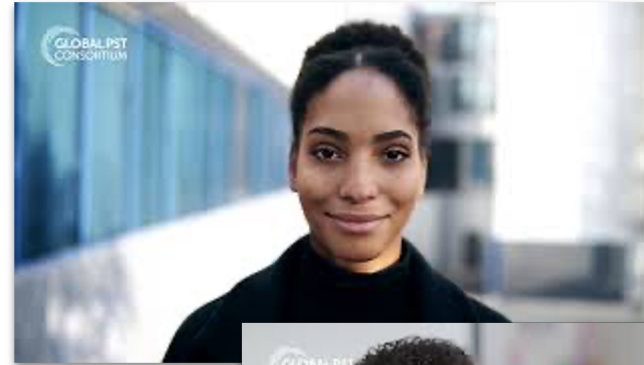
Impact of EVs on Power Systems



Network Planning and Pricing to Support Net Zero Transition

Advancing Gender Diversity and Inclusion in the Classroom

- Women students and faculty are under-represented at many of the university-level technical degree programs that are training the power sector workforce of the future
- Goals:
 - Expand access to high-quality technical training and cutting-edge learning materials, for university students and power sector practitioners
 - Increase the visibility of women power experts through flipped classroom delivery
 - Inspire younger generations of women to take up careers in this exciting sector by streaming Women in PST motivational videos that highlight [leading women experts](#) and [opportunities in advanced power system operations](#)

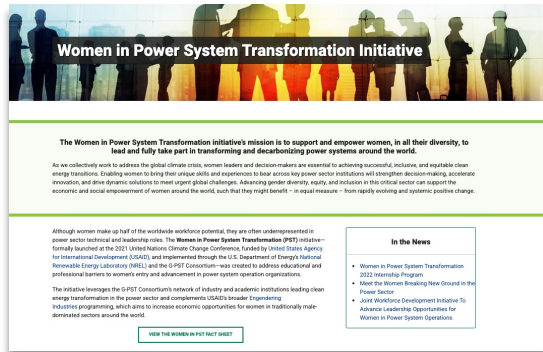


ERCOT Example

- ERCOT monitors inertia in real time based on generator status and inertia of each generator since 2016.
- Monitoring by generation type – useful for trend analysis
- Inertia forecasting, based on generators' Current Operating Plans submitted to the market every hour and spanning 168 hours ahead.
- ERCOT uses forecasted inertia to ensure inertia and frequency reserve sufficiency.

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Thank You and Learn More



Women in Power System Transformation Initiative

The Women in Power System Transformation initiative's mission is to support and empower women, in all their diversity, to lead and fully take part in transforming and decarbonizing power systems around the world.

As we collectively work to address the global climate crisis, women leaders and decision-makers are essential to achieving successful, inclusive, and equitable clean energy transitions. Enabling women to bring their unique skills and experiences to bear across key power sector institutions will strengthen decision-making, accelerate innovation, and drive dynamic solutions to meet urgent global challenges. Advancing gender diversity, equity, and inclusion in this critical sector can support the economic and social empowerment of women around the world, such that they might benefit – in equal measure – from rapidly evolving and systemic positive change.

Although women make up half of the worldwide workforce potential, they are often underrepresented in power sector technical and leadership roles. The **Women in Power System Transformation (WIPST)** initiative – formerly launched at the 2021 United Nations Climate Change Conference, funded by United States Agency for International Development (USAID), and implemented through the U.S. Department of Energy's National Renewable Energy Laboratory (NREL), and the WIPST Consortium – was created to address educational and professional barriers to women's entry and advancement in power system operation organizations.

The initiative leverages the WIPST Consortium's network of industry and academic institutions leading clean energy transformations in the power sector and comprehensive O&M's leader Engineering Industries programming, which aims to increase economic opportunities for women in traditionally underrepresented sectors around the world.

In the News

- Women in Power System Transformation 2022 Internship Program
- Meet the Women Breaking New Ground in the Power Sector
- Joint Workforce Development Initiative To Advance Leadership Opportunities for Women in Power System Operations

[VIEW THE WOMEN IN PAST FACT SHEET](#)

[Website](#)



Video: *Empowering Women to Lead Systems Transformation*

Strategic Workforce Development

- Workforce that can support deep decarbonisation of power systems
- Educate graduates and upskill professionals on ‘forward-looking’ topics with direct connections to system operations
- [Inaugural Teaching Agenda](#) identifies ~100 topics under 9 areas – prioritised by leading system operators



Teaching Agenda Subject Areas

