



## **Dr Abid Mehmood, Lecturer, Cardiff University**

*Championing renewable energy*

Dr Abid is a passionate researcher of social innovation and sustainable development initiatives. Following COP26, he wants to address a more specific challenge relating to the clean energy transition. With significant knowledge about the renewable energy sector in the UK, Abid aims to work with colleagues in other countries who are also keen to reduce the carbon emissions from local energy production and consumption.

### **The challenge**

The energy sector accounts for a quarter of the world's greenhouse gas emissions. COP26 emphasised the need to accelerate the clean energy transition. There is a need now to integrate renewables into power grids and support distributed, small-scale and resilient renewable energy production and consumption for a 'just transition'. However, this cannot be achieved without dialogue between all relevant stakeholders including public bodies, private enterprises, energy companies, civil society, and the public.

Despite renewable energy technologies becoming more innovative, efficient, and cheaper, there is still a disparity in terms of access. In many of low- and middle-income countries, up to 90% of energy is produced through non-renewable sources. Aging infrastructure, grids, and distribution systems are increasingly becoming expensive to maintain. Communities, especially those in poor, rural, or remote areas, face inconsistent supply and load-shedding. Smaller or more localised use of solar panels, micro-hydro, or smaller wind turbines could help to reduce reliance on the larger grids that are also prone to natural hazards and protect people from energy price rises.

In addition to transitioning to greater renewable energy production, complexities also continue to arise from the transportation and storage of renewable energy.

### **The ambition**

Abid's goal is to help bridge the regional gap in renewable energy and share knowledge, experiences, and concerns between the communities of the global south and north. This will help to explore avenues for just renewable energy transition that is affordable, sustainable, and aligned with the needs of communities.

Abid will bring together experts from Africa, Asia, and Europe to share new technologies and systems that put less strain on energy grids. They will evaluate how localised renewable energy production can help to improve regional resilience and minimise environmental hazards and disasters. Additionally, the experts will

consider the challenges arising from rapid urban expansion, including energy access and supply for health and emergency services as well as for poor, vulnerable, and remote consumers.

To achieve this, Abid will be working on a number of tracks: First, to conduct a survey with experts from different fields, including architects, civil engineers, urban planners, community representatives, and NGOs. Second, a series of webinars to exchange knowledge regarding different aspects of the renewable energy transition and related issues. Third, organise an international competition for young professionals and university students to work in interdisciplinary groups for designing an affordable, sustainable, and zero-energy house. All participants are offered a series of capacity building workshops. The project website <https://suspret.org> allows sharing knowledge with the policy makers, professionals and public.

#### **Relevant UN Sustainable Development Goals (SDGs)**

- Affordable clean energy (SDG 7)
- Sustainable cities and communities (SDG 11)
- Climate action (SDG 13)

#### **Involvement with the Royal Academy of Engineering**

Abid first became involved with the Academy through a Frontiers Symposium on urban resilience in 2019. He enjoyed how the symposium encouraged a community spirit and allowed him to build a network with people he had not worked with previously. After taking part in a Frontiers seed funding grant project, his collaborators encouraged him to apply for Frontiers Champions.

Abid says that what he enjoys most about Frontiers Champions is the freedom – as a social scientist, he never would have considered applying to an engineering organisation before. “If you have a good idea, you’re not constrained by discipline. The Royal Academy of Engineering’s flexibility is impressive and they’re ready to risk supporting good ideas.”