

The Royal Society,  
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London,  
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United Kingdom.

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9 September 2024

**Re: Letter of Support for the Enhancing Resilience of Future Hydrogen Energy Systems Research Fellowship Application**

Dear Royal Society Fellowship Committee,

On behalf of the Sustainable Energy Authority of Ireland, I can confirm our support of Dr Sheng Wang's application for the Royal Society University Research Fellowship entitled "Enhancing Resilience of Future Hydrogen Energy Systems".

SEAI is Ireland's national sustainable energy authority. We work with householders, businesses, communities and government to create a cleaner energy future. Our vision is for Ireland's energy to be sustainable, secure, affordable, and clean. To achieve this, Ireland must use less energy, move to clean energy and innovate to create new solutions to meet our energy needs. Leading the transition to smarter and more sustainable energy activities is central to what we do. SEAI has a policy advisory and technical support role for energy policy development and delivery through a range of state and EU funded energy efficiency and renewable energy programmes. We have a lead role in the transformation of Ireland into a society based on sustainable energy structures, technologies and practices.

Muhammad Bah is currently working on a fellowship within SEAI and has been collaborating with Dr Wang on another SEAI led research project titled 'hydrogen modelling best practices to inform national policy making decisions'. The project aims to develop a set of guiding principles for developing a representative hydrogen module in a generic national energy system model. The results of this research will feed into the re-development of SEAI's hydrogen module in the National Energy Modelling Framework (NEMF). Regular exchanges and data sharing have been established and will continue over the course of the fellowship.

If successful, this research will be the first to systematically quantify the impacts of hydrogen integration on energy system resilience. The non-confidential parts of data, models, algorithms, and results will be fully transparent with SEAI, which could enrich SEAI's toolbox in modelling national energy systems. Though quantitative results vary across countries, the methodology developed will be broadly applicable.

Dr Wang's ongoing research work on Ireland's hydrogen export potential aligns with future SEAI modelling tasks. His research outputs will be a useful input when empirically assessing the future role of Ireland in the international hydrogen market.

We welcome this opportunity to collaborate with your fellowship programme and look forward to the outputs of Dr Wang's research which we hope will be a valuable contribution to progressing the net zero transition.

Yours sincerely,



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Kerrie Sheehan  
Head of Research, Innovation and Electricity Department  
Sustainable Energy Authority of Ireland

cc. Dr Emer Dennehy, Programme Manager – Offshore, Ann-Marie Colbert, Programme Manager – International Energy Research