**Potential contribution to Technical Meeting on Synergies in Technology Development between Nuclear Fission and Fusion for Energy Production**

**Session 8.02 Public acceptance and support**

**Achieving a Social License for Fusion Energy**

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Fusion has the potential to address humanity’s energy needs.  However, there is a risk that fusion will not play a substantial role in mitigating climate change or alleviating energy poverty due to a lack of social acceptance.  This risk is not academic -- other promising technologies, such as fission reactors, spent fuel waste repositories (i.e., Yucca Mountain), genetically modified foods, and even vaccines, struggle because they are rejected by a substantial fraction of society.  Conventional approaches to this challenge, including risk-reducing technical solutions, such as replacing fission with fusion, and better “communication” or “education,” are unlikely, on their own, to alleviate a lack of acceptance [1].

Looking to other industries, endeavors, and fields of research, this talk will describe this risk and explore established methods that have been used to achieve social acceptance of emerging technologies and specific projects, particularly the "social license" [2], bioethical review [3], and responsible research and innovation. A key insight of these methods is that technology proponents must engage in meaningful two-way dialogue with the public and address the public’s concerns through modifications of the technology and/or business models.  Looking to global bioethics literature, the talk will discuss seven different categories of concerns that are likely to arise as fusion is commercialized, including energy access and conservation, human health and safety, future generations, land and the environment, community solidarity, and distribution of benefits and harms.  The talk will conclude with specific recommendations for researchers, funders, regulators and other stakeholders to facilitate long term social acceptance of fusion power.

[1] Otway HJ, Maurer D, Thomas K, “Nuclear power: The question of public acceptance,” Futures 10:109–118 (1978). doi: 10.1016/0016-3287(78)90065-4
[2] Hoedl, Seth A. "A Social License for Nuclear Technologies." Nuclear Non-Proliferation in International Law-Volume IV. TMC Asser Press, The Hague, 2019. 19-44. <https://arxiv.org/pdf/2009.09844>
[3] Hoedl, Seth A. “Ethical Review for Nuclear Power: Inspiration from Bioethics.” Nuclear Non-Proliferation in International Law-Volume VI. (Springer/Asser Press, forthcoming in 2021)