



Energiforsks Annual Nuclear Conference 2020

2020.01.21 – 2020.01.22

Here you will find abstracts for presentations held at the Annual Nuclear Conference, organised by Energiforsk. This year experts from an international arena gathered in Stockholm to share their insights on the nuclear power industry in view of climate change, challenging electricity markets and increased public awareness. The role of nuclear power in sustainable energy systems is a topic of increasing centrality in European and national energy policies and during the day environmental, economic, and social sustainability topics were explored and discussed.

2020.01.21

Is Nuclear Power Sustainable? - The Results of a Mapping Exercise of Current Research

Thomas Unger, Profu

In the wake of increasing awareness of climate change, nuclear power has recently regained interest in the political debate and in the media as a potentially necessary means to mitigate climate change. But what does science say about that? Is there any scientific consensus on this topic and how do scientists view the possibilities of nuclear power to contribute to a sustainable energy system and to climate mitigation? Energiforsk Nuclear Portfolio initiated a literature survey and analysis to elaborate on the subject. The project was carried out by senior researchers from Profu during spring 2019, in collaboration with Energiforsk R&D program North European Power Perspectives, NEPP. The full report, [*Sustainability aspects on nuclear power- A literature survey 2019:607*](#), can be found on www.energiforsk.se.

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Can Nuclear Power be Part of a Sustainable Future?

Fredrik Hedenus,

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Sustainable development may be understood as a development that provide for human needs today and in the future. To achieve this, important prerequisites are required in the form of a functional ecological system (nature that can provide resources), economic system (sustained natural resources and capital stocks) and social system (trust and institutions). Nuclear power does not itself undermine any of these prerequisites, even though nuclear proliferation may have adverse effect on the social system. It has been claimed that nuclear power is required to meet the need for electricity if carbon emissions are to be curbed. An analysis of the Swedish case show that this is not the case. In the case of no additional built transmission, nuclear power would only reduce the cost of the Swedish electricity system marginally even if nuclear power could be built for a cost of 3700 €/kW.

The Three Dimensions of Sustainability in View of Nuclear Power

Kirsty Gogan, Energy for Humanity

No abstract provided. Please refer to presentation available at [Energiforsk's conference page](#) for further information.

Low-Carbon Energy Transitions and Global Materials Outlook

Luminita Grancea, OECD Nuclear Energy Agency

No abstract provided. Please refer to presentation available at [Energiforsk's conference page](#) for further information.

Sustainable Finance Taxonomy: The Nuclear Conundrum

Jessica Johnson, European Atomic Forum, FORATOM

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No abstract provided. Please refer to presentation available at [Energiforsk's conference page](#) for further information.

Stakeholder Engagement in Nuclear Power Programmes - International Good Practices and Current Trends

Lisa Berthelot, International Atomic Energy Agency

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The IAEA assists operating, expanding and new nuclear power programmes in the area of stakeholder involvement through a variety of capacity-building activities and tools. Working with counterparts in its Member States from governments, owner/operators and regulators, the IAEA considers needs, challenges and trends to deliver targeted support at the national, regional and interregional levels. In understanding stakeholder engagement as a multifaceted field that includes relationship building, partnerships, consultation and public information, the IAEA collects and shares good practices from around the world to help its Member States strengthen and adapt their efforts. Effectively communicating about the safe, secure and sustainable use of nuclear power remains a challenge internationally. Information sharing across organizations, industries and borders can provide new insights into strengthening communication and engagement about nuclear power and, in particular, about its role in a low carbon energy mix. The IAEA delivers its support based on requests from Member States and offers many opportunities throughout the year, for example through technical meetings, training courses, and webinars, for practitioners to seek out potential new ways to address their most pressing challenges.

Knowledge About Final Disposal of High Nuclear Waste Among Citizens and Politicians

Jenny Palm, The International Institute for Industrial Environmental Economics, Lund University

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In 2011, the Swedish Nuclear Fuel and Waste Management Company (SKB) applied for a permit to construct a disposal facility. The Swedish government is expected to make a decision in 2020. Three surveys have been conducted to investigate how informed the Swedish Members of Parliament (MP) and the citizens are in these issues. The first study with the MPs was done in 2013, the second in 2016 and the one with the citizens was conducted in the winter of 2018/2019. The results show that most MPs and half of the citizens were aware of the ongoing permission process. Rather surprisingly, there were more politicians and citizens who knew about the suggestions to use copper canisters, than knew the suggested location. In general, nuclear waste was seen as an important issue by all respondents. A majority of the MPs and the citizens believed that Sweden can dispose the waste in a safe manner. Among the citizens, the trust in politicians' decisions on where and how to build a final repository were low and more trust was put into scientists and experts. Half of the citizens wanted to see a phase out of nuclear power, over half of the MPs meant that the repository should be designed so that the withdrawal of nuclear waste can be done.

[Open access to survey results.](#)

Regulated Asset Base Financing Mechanisms - Its Rationale and Potential Application for new Nuclear

Tom Martyn, Department for Business, Energy & Industrial Strategy, UK

No abstract provided. Please refer to presentation available at [Energiforsk's conference page](#) for further information.

The Future for Nordic Nuclear Power

Tiina Tuomela, Fortum Corporation

Fortum considers climate change as one of the biggest challenges for mankind, and mitigation requires strong political commitment as well as ambitious and prompt action. Nuclear has an important role in accommodating a low-carbon system in the future as there is an increasing need for low-CO₂ energy to replace fossil fuels in traffic, industry, heating and cooling. Together, we must ensure the competitiveness of nuclear, enable lifetime extensions of current fleet and welcome new technologies, such as SMR's.

Sustainable Financing for Nuclear Projects in a Global Perspective

Polina Lion, Rosatom

The sustainability agenda is even more complicated than the climate challenge and electricity supply, because it also implies such important issues as human welfare, reduction of inequalities, consistent industrial growth and many others. Nowadays there certainly exists a shift from fossil fuel to renewable sources and according to the International Energy Agency there is no chance to fulfill CO₂ emission reduction commitment by 2040 without nuclear energy. Although the NPP project is quite challenging for common market investors, as there appears long-term lifecycle and common infrastructure projects risks, it is time to reconsider the financing approach for such projects. Not only financial benefits should be taken into account, but all significant social and macroeconomic effects which such projects may bring. According to Rosatom NPP construction experience in different regions either in emerging or in developed countries, despite quite a significant economic difference of these countries, nuclear projects support local energy needs with the supply of stable and low-carbon source of electricity. NPP projects also guarantee job places for thousands of people for more than 60 years, provide additional orders for regional producers, contribute to local infrastructure development and have certain positive impact on general economic growth of the country. Considering that nuclear energy is definitely low-carbon and all its positive effects is in compliance with the UN's 17 SDGs, it should be a part of future sustainable energy mix. This statement is aligned with European Parliament decision, which has

recognized nuclear power as a transitional technology in December 2019 when discussing the European Green deal. Therefore, nuclear projects are worth to be financed with sustainable financing sources together with support at the governmental level.