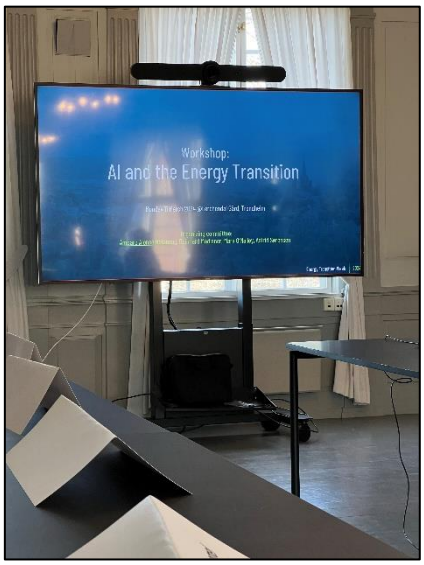
NTNU Energy Transition Conference 2024: Building Momentum for Sustainable Solutions

Date: 11th – 12th of March 2024
Location: Trondheim, Norway
11th of March – Lerchendal Gård
12th Clarion Hotel Brattøra Trondheim

Day 1, 11th of March

Workshop: AI & the Energy Transition



The Workshop on "AI and the Energy Transition" convened experts and enthusiasts from various disciplines to explore the intersection of Artificial Intelligence (AI) and sustainability, particularly in the context of energy transition. With increasing concerns about the environmental impact of AI technologies alongside their potential to drive sustainability, the conference provided a platform for dialogue, insights, and collaboration.

The workshop took place at a very interesting historical building - Lerchendal Gård. It is a historic building originally constructed in the 1700s as a traditional farmstead. In the late 19th century, Lerchendal Gård was expanded and redesigned in the Swiss chalet style, adding to its architectural charm. Throughout its history, Lerchendal Gård has been home to various notable figures and has played a significant role in the cultural and social fabric of the region. It has served as a residence, a venue for events, and a symbol of heritage and tradition.

The room was full of interesting people representing both academia, industry and startups, both Norwegian and European, namely: Statnett, Equinor, Inditex, Tietoevry, Kavli senteret, NTNU, University of A Coruna, OptiSpark, eSmart Systems, Eindhoven University of Technology.

It is important to note that the workshop was run “off-the-record”, which means that it was not recorded, filming was not advisable. Quoting of the participants is only allowed after their consent. It was done with the purpose of having an open and honest discussion. To respect that rule, my report is going to give a more overall information about the topics brought up.

Key Themes and Discussions

The conference featured insightful keynote addresses by Bjarne Foss and Gunnar Tufte, providing overarching perspectives on the role of AI in the energy transition. Their speeches underscored the significance of sustainable AI practices and highlighted opportunities for leveraging AI to achieve environmental goals effectively.

1. Sustainable AI:

The first session focused on Sustainable AI, addressing the pressing need to reduce the energy consumption associated with AI models. Presentations covered diverse topics such as measuring energy consumption of algorithms, personalization and greener models, reducing the footprint of Deep Learning models, long-life learning, and exploring Federated Learning and Edge Computing for collaborative and more sustainable AI. These discussions highlighted the importance of optimizing AI algorithms and infrastructure to minimize energy consumption without compromising on performance.

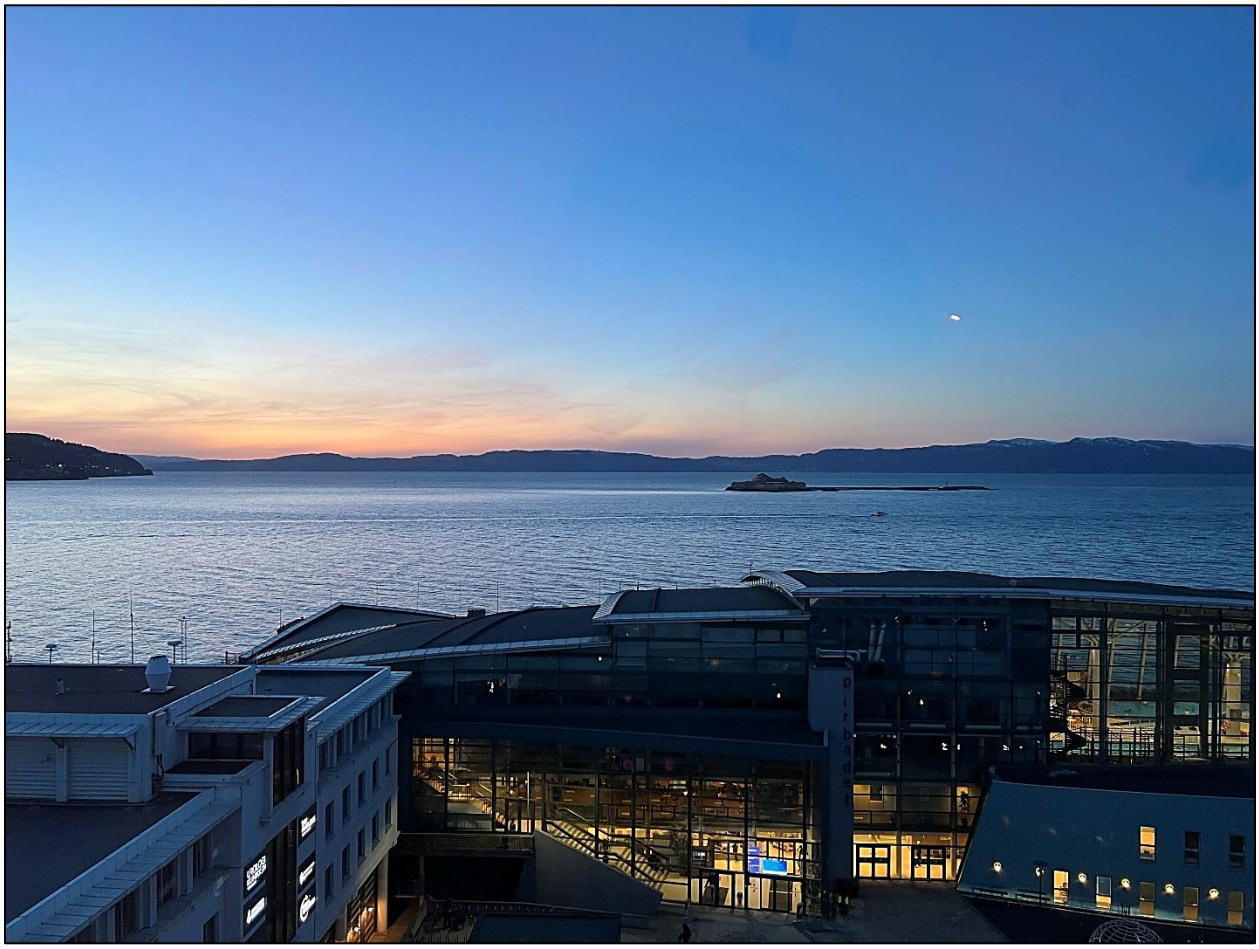
2. AI for Sustainability:

The afternoon session delved into the application of AI for sustainability across various domains. Presentations and discussions revolved around the relevance of psychosociological variables in AI development, AI's role in cities, urban life, and transportation, and its applications in industrial settings. Speakers emphasized the potential of AI to address environmental challenges, optimize resource utilization, and drive innovation in sustainable practices across different sectors.

Dinner 11th of March – Clarion Hotel Trondheim, the Rooftop:

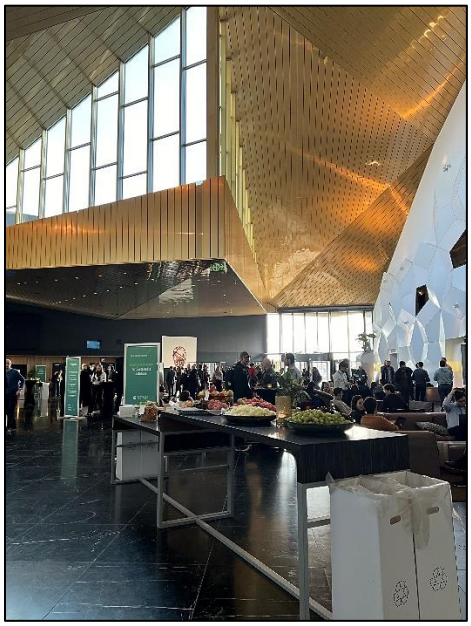
As a part of the Workshop on AI & Energy transition, I had an opportunity to attend the networking dinner at Clarion the Rooftop restaurant. The networking dinner is an important arena for meeting people that are attending the conference and are passionate about the same issues. It was full of exchanges and ideas.

It was a pleasant opportunity to meet the researchers that I have met on previous occasions, but also to make new contacts. I am sure that in general for the majority of participants, the interactions facilitated the exchange of ideas, expertise, and best practices, paving the way for future initiatives aimed at harnessing AI for sustainable development. And the location was of course also very inspiring:



Day 2, 12th of March

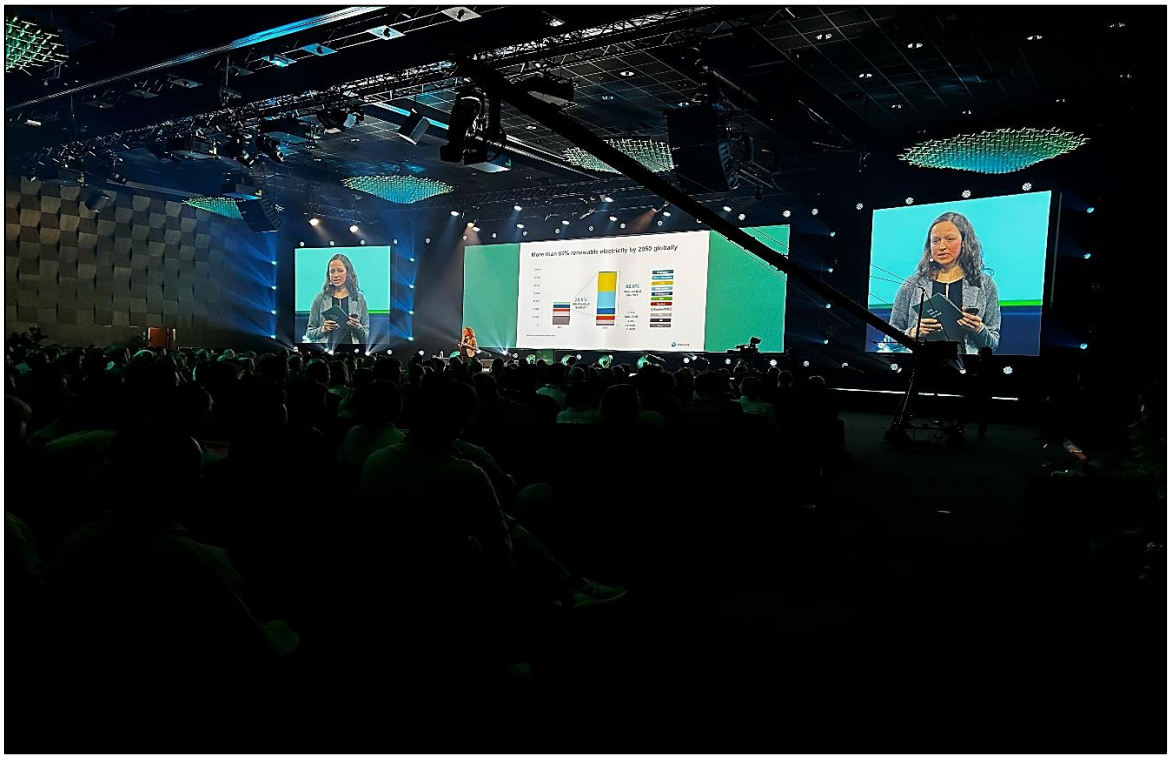
NTNU Energy Transition Conference 2024: Building Momentum for Sustainable Solutions



The NTNU Energy Transition Conference 2024 in Trondheim convened leading experts, policymakers, and industry representatives to delve into critical discussions on global energy dynamics. Themed 'Building Momentum for Sustainable Solutions', the conference aimed to provide strategic insights into transitioning away from carbon-intensive energy systems, exploring market trends, geopolitical influences, research advancements, and upcoming industry transformations.

Keynote Addresses:

The conference commenced with keynote addresses from distinguished speakers who provided an overview of the current policy landscape and strategies to realign towards sustainability. Notable speakers included Marianne Sivertsen Næss, Member of Parliament; Jim McFarland, Senior Economist at the U.S. EPA's Climate Change Division; Matthew Baldwin, Deputy Director-General at the Energy Department of the European Commission; and Tor Grande, Rector of NTNU.



Session I: Scaling Markets and Solutions:

The first session focused on scaling up green technologies and solutions to expedite the energy transition process. Discussions revolved around balancing environmental preservation with the imperative for faster implementation of renewable generation, political incentives for catalyzing change, the role of education in workforce development, and the impact of international competition and geopolitics on investments. Speakers from Siemens Energy Nordics, Xiron Global, Statkraft, SINTEF Energy Research, and CEEW provided insights into these crucial aspects.

Session II: Unlocking Resilient Circular Economies:

The second session explored the role of circular value chains in fostering resilient energy transitions. Participants deliberated on ensuring the resilience of vital components within circular economies amidst uncertain materials and regulations, the influence of deglobalization on circular value chains, and its implications for the transport and industrial sectors. Experts from NTNU, University Savoie Mont Blanc, Mercedes-Benz AG, Fraunhofer IST, and the Norwegian Labour Party offered their perspectives on these challenges.

Session III: Tensions in the Transition - Nature, Culture, and Democracy:

The final session addressed the conflicts arising from the energy transition's impact on biodiversity, cultural traditions, and democratic decision-making. Panelists discussed strategies for equipping democracies to make swift yet inclusive decisions, fostering public engagement in the transition process, and evaluating progress beyond conventional metrics like GDP and CO2 emissions. Representatives from Equinor, The World Bank, UNEP, Eindhoven University of Technology, and others contributed valuable insights to the discourse.

Conclusion

The workshop on "AI and the Energy Transition" served as a valuable platform for interdisciplinary dialogue and knowledge exchange. By bringing together stakeholders from diverse backgrounds, the event underscored the importance of integrating sustainability principles into AI research, development, and deployment. Moving forward, continued efforts are needed to advance the agenda of sustainable AI and leverage the potential of AI to drive positive environmental outcomes in the context of the energy transition.

The NTNU Energy Transition Conference 2024 provided a platform for robust deliberations on navigating the complexities of transitioning towards sustainable energy systems. Through keynote addresses and thematic sessions, participants gained valuable insights into the multifaceted challenges and opportunities inherent in this global endeavor. The diverse range of perspectives and expertise shared during the conference underscored the collaborative effort required to build momentum for sustainable energy solutions in the face of pressing environmental concerns and geopolitical dynamics.

As I reflect on the insights gained from this conference, I am looking forward to translating ideas into action and collaborating on initiatives that harness the power of AI to accelerate the energy transition. For me personally, it served as a boost of inspiration to approach the projects we are working internally on in a new way. In addition, I am looking forward to share the insights with my colleagues at Tietoevry.