



Investements in New Technologies – Key towards Carbon Neutrality 2.2.2022

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All low carbon technologies should be used simultaneously

- **There are five categories of measures for reducing GHG emissions:**
- Energy efficiency
- Promoting the use of renewable energies; in Finland the most important renewable energy is wood based biomass
- New build of nuclear energy, both in power production and district heating
- Carbon capture, utilisation and storage
- System level solutions, such as sector integration, digitalisation, new intelligent energy services



Finnish technology industry companies have a wide selection of low carbon technologies

- We have special knowlegde in district heating, cogeneration of heating/cooling and power, environmental friendly boiler technology for solid biomass and residues
- We generate electricity without emissions by nuclear power, hydropower and solar energy; specific emissions in 2021 were 63 gCO₂/kWh, when the EU average is 231 gCO₂/kWh
- We have over 40 years of experience in using nuclear power safely and effectively
- In energy efficiency we manufacture some top technologies e.g. frequency converters, heat recovery systems, heat pump technologies and modern building automation systems



High technology offers new business opportunities for Finnish technology industry companies

- There are several emerging high technologies that Finnish companies are investing for future solutions
- Some examples are digitalisation, artificial intelligence, Internet of Things, 5G and 6G, Big Data, remote control and robotics
- All these technologies have large business potentials in international markets both in energy service sector and manufacturing industries



Technology industry companies are actively developing new low carbon technologies

- New low carbon technologies are fuel cells and other hydrogen technologies and batteries; there are dedicated industrial clusters for hydrogen and for batteries established recently in Finland
- There is a large scale project to switch steel production from coke to hydrogen reduction in SSAB steel factory in Raahе
- We can decarbonise power production, but how to decarbonise district heating sector? One answer is offered by small modular reactors (SMR) that could be utilised in several cities and towns around Finlandin district heating or CHP