

A walkthrough of the Copenhagen Atomics Waste Burner design

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This talk will give an introduction on Copenhagen Atomics and then elaborate on Copenhagen Atomics major objectives, which is to build thorium molten salt reactors (MSR) on an assembly line preferably with the reactor core fitted in a 40 foot shipping container. The first model will be 50 MWt and it will start on a 78% LiF-22% ThF₄ salt, mixed with plutonium and actinides from spent nuclear fuel (SNF). Over decades U²³³ in the salt will increase and eventually help to burn out long lived actinides. The plan is to locate these waste burners at the site of existing Light Water Reactors (LWR) plants to avoid SNF transport, avoid approval of new sites and take advantage of the security and power grid infrastructures. The talk will allow the audience to understand similarities and differences between the Copenhagen Atomics Waste Burner and other MSRs such as LFTR and IMSR. The main objective of Copenhagen Atomics is to convince the public that it is possible to build a machine (MSR), which can burn many of the long lived actinides out of SNF and reduce the storage time from 100.000+ years to 300 years, while at the same time produce enough energy to pay for the process and decommissioning. The heavy water cooled thorium reactor is feasible to be introduced by using Pu recovered from spent fuel of LWR, keeping continuity with current LWR infrastructure. This thorium reactor can be operated as sustainable energy supplier and also MA transmuter to realize future society with less long-lived nuclear waste.

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Mr. Thomas Jam Pedersen is a co-founder of Copenhagen Atomics, with a background in mathematical modeling. Thomas holds an M.sc.EE from Technical University of Denmark and University of Texas at Austin and more than 15 years of experience from technology driven industries.

