NA64 is a fixed target experiment at the CERN SPS aiming at a sensitive search for hidden sectors. The A’, called dark photon, could be generated in the reaction $e^-Z \rightarrow e^-Z A'$ of 100 GeV electrons dumped against an active target which is followed by the prompt invisible decay $A' \rightarrow \chi\chi$. The experimental signature of this process would be a clean event with an isolated electron and large missing energy in the detector. Results on the search for the visible $A' \rightarrow e^+e^-$ decays, as well as $X \rightarrow e^+e^-$ decay of a new 17 MeV X boson, which could explain a recently observed anomaly in the 8Be transitions will be also discussed.

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