

Cadmium telluride photovoltaics

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A CdTe photovoltaic array

Cadmium telluride (CdTe) photovoltaics describes a [photovoltaic](#) (PV) technology that is based on the use of [cadmium telluride thin film](#), a [semiconductor](#) layer designed to absorb and convert sunlight into electricity.^[1] [Cadmium telluride](#) PV is the only thin film photovoltaic technology to surpass [crystalline silicon](#) PV in cheapness for a significant portion of the PV market, namely in multi-kilowatt systems.^{[1][2][3]} CdTe PV is considered the ecologically leading technology as it provides a solution to key ecological issues including climate change, energy security, and water scarcity.^[4] It is also considered the most eco-efficient current PV technology when comparing a range of application scenarios e.g. commercial rooftop applications or large scale ground mount applications.^[5] On a life cycle basis, CdTe PV has the smallest carbon footprint, lowest water use, and fastest energy payback time of all solar technologies.^{[6][7][8]} A fast energy payback time enables PV to scale with faster carbon reductions without causing short-term energy deficits.