

Redeem Solar Technologies

OUR VISION IS TO ENABLE INDUSTRY TO BECOME LOCAL AND CARBON NEUTRAL, BY HARVESTING SOLAR ENERGY IN LIQUID CHEMICAL PANELS.

Sanctions, trade wars, and climate crisis are restricting consumers and businesses access to energy and materials in Europe. The complex supply chain of chemicals and fossil fuels are forcing businesses to relocate abroad and limiting the growth of economies in Europe and the United States. The market opportunity for green and local chemical manufacture with renewable energy is estimated to be worth € 15.3B today and grows at CAGR of 54%.

Redeem Solar Technologies (Redeem) revolutionizes the chemical industry by developing a patent-protected modular and stand-alone photocatalytic technology that runs on solar energy to produce hydrogen, fertilizers, and chemicals. Redeem breaks the technical barrier that limited photocatalysis potential for the last 30 years to laboratory applications by developing a reusable photocatalyst and a high efficiency photoreactor. Redeem reactor is equipped with instantaneous gas bubble separation to directly remove them before they form during the reaction, and thus, maximizes light energy utilization. Redeem reactors combine the functionality of three expensive laboratory devices in one easy to operate device that can be scaled up to industrial capacity.

Our vision is to enable industry to become local and carbon neutral, by harvesting solar energy in liquid chemical panels. The target sectors with Redeems technology include green hydrogen, sustainable chemicals, on-site fertilizers, on-site wastewater treatment, and green pharmaceuticals. Moreover, the emerging need for making fuels, drugs, and food in outer space is expected to reach € 26.9B by year 2030, that creates an additional growth vector for the on-demand chemical manufacture with solar energy from Redeem. The market need for Redeems solution was validated by interviewing more than 100 entities in the Energy and Space sectors. Customer feedback was used to develop the R&D and pricing strategy for Redeem. A synergistic R&D plan is devised to utilize the common milestones among various market sectors and leverage the team expertise. Redeem team consists of four members and three advisors that work together to bring the technology to market. Redeem will generate revenue from reactor sales to small-scale laboratory applications in 18 months from initiating the next R&D phase (TRL 4 to 7). The revenue is expected to reach € 55 M in 5 years mostly driven by B2B sales to large-scale industry applications.

The team brings the core business and technical competencies needed to develop the solution. Redeem raises awareness about the technology through the company website, expos, and conferences. Small-scale reactors will be sold through laboratory equipment reendistributors and Redeem will carry direct B2B sales for large-scale applications, mainly in Europe and the US. Early units will be provided at low or no profit to at least one customer in each sector for validation and market penetration. Machined reactor parts and catalyst raw material will be outsourced from industry partners and Redeem will perform the reactor assembly and the final quality control prior to packaging and shipment. Redeem filed for initial IP and will expand its portfolio in the next two years. Redeem is currently seeking pre-seed funding through public and private investment in Austria and the EU zone.

USP

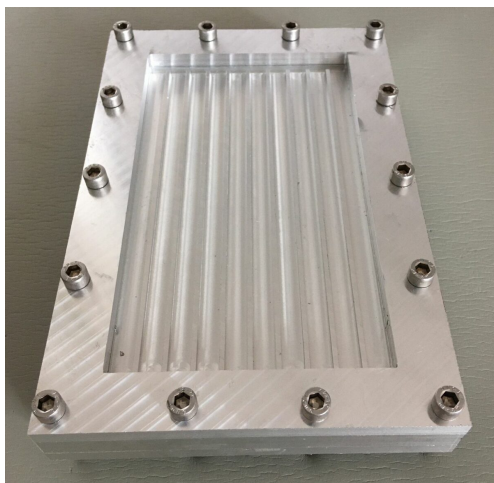
Easy operation, catalyst reuse, 3 in 1 reactor

Target market

Green hydrogen, sustainable chemicals, on-site fertilizers, on-site wastewater treatment, and green pharmaceuticals

Space connection

Solar reactors create fuels and chemicals for long duration missions and space colonization.



PRODUCT IMAGE

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