Oil Filter Recycling Plant

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The main task was to find a new disposal method for used oil filters. A company in Costa Rica had big problems with contamination of the ground and ground water with oil because of the thrown-away oil filters. The initial idea was to create a machine that splits the oil filter in his three main components metal, oil and paper. These components now can be recycled or reused. With this idea it is possible to achieve a low-cost machine and to earn a lot of money while you are helping the environment. The task of the students was clearly defined by the costumer – viability through efficiency. Having a defined task around January 2014, the students can start with the planning of the entire project. In order to test the theoretical concept the students developed, the next phase had to be started – a real scale archetype. This is the model the students will use for all testing while in Austria. The model will not be finished before the trip to Costa Rica though, a county were help is needed. It will be finished during and after school, while they get the documentation and the calculation done. After the students arrived in Costa Rica they started to manufacture the prototype. They worked over 10 weeks in the workshop manufacturing shafts, the frame, casings, selecting components. After we had finished the prototype we started to test it. As our results show it is possible to earn more than 300t of metal, 200 000l of used oil and 80 000m² of paper. If the materials are sold or reused for themselves the break-even point shows that the machine pays for itself within one year.

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