



JoRec (Jordan Recycles), www.jorec.org

(NGO In registration) In Karameh/Jordan

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JoRec Project Proposal 02

Decentralized Plastic Recycling – Solar-operated JoRec Truck

Background

As there is no existing nationwide waste separation collecting system, the biggest challenge is the voluminous transport of empty plastic bottles with 99% air. The referring transportation costs make any approach for Recycling all over Jordan un-economical and thus un-ecological.

Project Idea

The complete required equipment for recycling of PET plastic bottles shall be mounted on a small truck. Thus the voluminous bottles will be shredded and direct melted on the spot to produce recycled floor tiles. In order to use renewable energy and to ensure the operation of the recycling process even in areas without public power supply, the walls and the roof of the truck shall be supplied with solar panels. This project idea was already realized in big scale by famous actor Jackie Chan, with whom we are in contact about it. He might agree to be the patron for this project and to join a first publicity mission in Jordan (www.trashpresso.com).

Project Description

A small standard truck (Kia Bongo or similar) shall be fully equipped with approx. 20 sqm solar panels. The panels, installed on the vertical walls shall be adjustable upwards to a horizontal position. The gained electrical power of about 4 kW is sufficient to run a 3 kW PET bottle crusher and a small ventilator with air filter. The grinded plastic flakes shall be melted by a gas oven, whereby the gases shall be exhausted and filtered by a small ventilation unit. The liquid plastic will be mixed with sand and poured in rectangular forms. Already after 20-30 minutes the floor slabs can be removed from the forms. Thus the final recycling product can stay direct on the spot and must not be further transported. It might be given out for free to motivate the referring plastic bottle collectors. The output can reach about 20 kg/hour (equal to approx. 1,000 plastic bottles).

Project Costs Estimation for installation and 1-year operation

1	A small 3 kW tailored PET bottle grinder -made in Jordan	3,200
2	Installation of a gas-run melting pipe oven	2,100
3	Small ventilation system with filter	1,500
4	20 sqm PV panels with adjusting devices	9,500
5	Electrical transforming system	1,900
6	Additional floor and ceiling and Installations on truck	2,400
7	Additional Batteries	2,200
8	Purchase of a small Bongo truck (existing)	-
9	Awareness painting of the truck	400
10	Loudspeaker installation for public announcements	400
11	1-year Operating Costs of the Truck (12*500JD)	6,000
12	1 driver & 2 workers for 1 year (12*500JD*3)	18,000
13	Costs for Communication (3*120)	360
14	Safety Equipment	1,200
	sum	49,160
	overheads % Admin. 12%	5,899
	total	55,059