

Green Entrepreneurship

Successful business cases of Green Entrepreneurs in the Mediterranean



Green Chip: Electronic waste collection and redistribution in Morocco

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Project Name: Green Chip
City, country: Marrakech, El Haouz, Morocco
Name of entrepreneur/ founder: Mr Ismaïl AKALAY

Description: CTT, a subsidiary of Managem, and in partnership with AL Jisr runs a workshop to collect, dismantle and sort precious metals, non ferrous metals, plastic and other waste, trains young people in metal and electronic recycling and recovers components from dismantling computers. The Al Jisr Association, through the Green Chip Pilot project undertakes to collect, dismantle and sort e-waste.

Investment: *Start up capital:* 2 million US\$ for the pilot project (CTT/ Managem and Al Jisr partnership) from Drosos a Swiss Foundation which accompanies monitoring and sustainability of the project.
Return on investment: Information not provided.
Sources of Funding: Current turnover of 1.5 to 2M US\$ and the larger Green Chip project projected at 12M US\$ turnover.

Stakeholders: Drosos, Ministry of Employment and Vocational Training, Ministry of National Education, International players in e-waste (UNEP; CEDARE; Step Initiative, Dell, HP), AL Jisr (working in partnership with CTT, a subsidiary of Managem).

Employment generation: CTT employs 24 people full time (1 engineer, 3 supervisors and 20 qualified operators). Over 150 people take part in dismantling and sorting, 80 – 100 for chips and non ferrous metals, and 65 to be trained for the dismantling and computer maintenance project (Green Chip)

Timeline:
 2008 : Start of the recycling E-waste project in the Research Center of Managem
 2009 : Signature of partnership between CTT, a subsidiary of Managem and Al Jisr
 2010 : First workshop to collect and dismantle E-waste at Casablanca: Green Chip project.
 2011 : Starting of furnace plant for dismantled E-waste from Green chip
 2011 : Feasibility study of the major project 120 000 tons of E-waste per year
 2012 : Start of the major project Green Chip

Feasibility study: Drosos audited CTT before giving the grant to Al Jisr. The Ministry of Employment and Vocational Training has approved the Training Center of Al Jisr and financially subsidized the project. The Ministry of National Education, through the Academy of Casablanca, allocated to the Project a 300 m², located at Moulay Abdellah High School, to establish the workshop, and to provide one technical director and two supervisors. A separate feasibility study is underway for Green Chip.

Geo-social-economic setting: E-waste is contaminating soil and groundwater, currently not treated correctly and provoking serious diseases. E-waste recycling provides an opportunity for the recycling sector, and the Hydro metallurgical complex of Guemassa site includes different refining metal plants; cobalt, nickel, zinc, copper and precious metals (gold and silver).

Key features:	Waste management, recycling, employment generation, training.
Overall rationale and motivation:	Preservation of the environment by recycling part or all of the electronic waste, Training of school dropouts in the business of collecting and dismantling E-waste, Creating added value by recycling non-ferrous metals and precious metals, Develop of the recycling of E-waste activity in Morocco (ambitious project of 120 000 tons of E-waste per year). 65 young school dropouts will be trained each year in computer maintenance and will receive a technical diploma and support for employability and creation of microenterprises. 7000 PC will be upgraded by the students and made available to the public schools in rural areas, through sponsorships schools and businesses. Disposal of 1500 tons of waste generated by technology information systems has grown dramatically in recent years. Waste recovery: converting an environmental constraint into products values (annual turnover: 1.5 to 2 MUSD) for the project pilot. More than 120 MUSD for the big project.
Strengths:	Project Partnership: Al Jisr ensures the collection and dismantling, CTT provides processing and commercialisation. Strong support from several partners: Ministry of National Education, Ministry of Employment and Vocational Training and the Swiss foundation Drosos. Hydro metallurgical complex in Guemassa site has 6 metallurgical plants for the refining of metals (cobalt, copper, zinc, nickel and precious metal). Treatment capacity of the furnace: 100 tons de electronic cards / month, 2000 tons of E-waste per month.
Challenges and constraints:	Mastery of the technology of the Electric Arc Furnace, newly introduced in our unit which requires recruitment of an engineer who specializes in this area.
Direct activities and impacts:	<i>Social:</i> Training is provided to school dropouts (65 youngsters / year), with courses recognized and supported by the Ministry of Employment and Vocational Training and the Ministry of National Education. <i>Environmental:</i> Tonnes of electronic waste avoided going to landfill. Guemassa is certified ISO 14001 Environmental, ISO 9001 quality and OHSAS 18001 for health and safety, CTT has the CGEM Label for Corporate Social Responsibility with a Sustainable Development Policy in place since 2002. All of liquid and solid residues are recycled (0 waste). <i>Economic:</i> Provide opportunities for young people trained to create their own businesses (assistance, support and monitoring) Creation of employment with the new unit of computer waste recycling site Guemassa.
Use of innovative technologies:	Electric arc furnace technology, experience in refining of precious metals and copper with the hydrometallurgical industrial units.
Evidence of a holistic approach/world view:	Emphasis on education, training and empowerment.
Policies, incentives and regulations needed:	For the major project, we must work aspects regulatory Morocco and abroad, authorization to import waste and regulatory requirements in Morocco.
Lessons and recommendations:	A process has been discovered to transform environmental constraints into real economic opportunities, make Morocco a pioneer in the field of recycling E-waste. Consolidate and improve the rate of collection and dismantling of the Green Chip Workshop, seek other partners, to expand the scope of supply of waste computer equipment, building additional workshops dismantling waste computer equipment in the eastern and southern Morocco.
References:	www.unctad.org/trade_env/greeneconomy/RTR20/part4RTR.pdf