


## **1 Israel**

### **1.1 Netanya Landfill Mining and Reclamation (PFS No: IL 01)**

PROJECT INFORMATION		Last Update: 14 September 2009	
Country	Israel	PFS No.	IL 01
Project Name	Netanya Landfill Mining and Reclamation		
Region / Governorate	Centre District		
City / Town	Netanya		
Sector	Solid Waste		
		<p><b>Key Objectives</b></p> <ul style="list-style-type: none"> <li>• To improve the quality of life and environment of residents in the city of Netanya with a population of 200,000, preventing air pollution by Biogas emissions to the atmosphere, and preventing solid wastes residues and leachates from the coast area.</li> <li>• To prevent the pollution of adjacent Irus (flower) unique nature reserve.</li> <li>• To prevent the pollution of the Mediterranean water near the shore of Netanya.</li> <li>• To enable the development of the coast strip of the city for building housing, hotels, shopping area and a sea promenade by the Mediterranean coast, according to a c new statutoric plan</li> </ul>	
<b>Project Components</b>		<p>LFMR project – Landfill Mining and Reclamation, working stages:</p> <ul style="list-style-type: none"> <li>• Excavating bio-degraded solids wastes from the landfill site.</li> <li>• Mechanical separation to different phases- undersize, oversize.</li> <li>• Recycling of the different outputs for different uses-material for site development, other recyclables uses</li> </ul>	
<b>Project Value</b>		Estimation – 2,000,000 cu.m. wastes x 17.5€ = 35,000,000 €	

<b>IFs</b>	
<b>National Strategy and NAP relevance</b>	<p>The project complies with the national policy of the Ministry of the Environment-Israel. The Ministry sets a strategy according to which all dump landfills which are not part of the national landfills plan will be closed and reclaimed. Moreover, being an old site, without modern environmental arrangements, the Ministry considers the Netanya landfill to be violating the water law, the clear air law, and the clean sea-shore law, and demands its reclamation.</p> <p>In line with the Barcelona Convention since it will reduce the pollution and maintain the quality of the coastal waters.</p>
<b>Relevance to H2020</b>	In line with H2020 priorities as this project will reduce the pollution generated from the closed solid waste dump.
<b>Key Parties</b>	<ul style="list-style-type: none"> <li>-The Municipality of Netanya</li> <li>-The Economic company for the development &amp; tourism Netanya-HALAT</li> <li>-The Ministry of Environment Protection – Israeli government.</li> <li>- The land authority of Israel</li> </ul>

A. GENERAL INFORMATION		
A.1	<b>Existing work / Current status</b>	<p>South of Netanya town the old and closed solid waste dumpsite should be rehabilitated to reduce the air pollution from the gasses, and the pollution to the sea caused by the leachate.</p> <p>At present the municipality is exposed to heavy fines as most of the land belongs to individual owners.</p> <p>The project will release substantial area of land for economic development creating new jobs.</p> <p>A feasibility study has been completed by HALAT and this project is considered as a priority programme for the municipality.</p>
A.2	<b>Description of area</b>	<p>The site is located in the southern part on the city of Netanya, Israel. Central co-ordinates (new Israel net co-ordinates): 185.100/688.700 see enclosed maps:</p> <p>a. Netanya area    b.site area</p> <p>The upper surface elevation of the landfill is between 40 to 54 m above sea level.</p> <p>The western borders of the landfill lie some 50 m from the water line. Here and there collapses of sand rock and wastes occur that fall onto the seashore.</p> <p><i>Proximity to water sources:</i> The Netanya landfill is located above the coastal aquifer. Any pollutants released penetrate to the water body.</p> <p><i>Proximity to water shed:</i> The coastal aquifer is the largest watershed in Israel.</p> <p>Different geo-morphological and rock layers build the cross section of the soil at this area. Most of them are permeable to water flow.</p> <p>The landfill can be easily approached from the main North-South main coast road of Netanya. There are some dirt roads going west into the landfill area.</p>
A.3	<b>Number of inhabitants</b>	200,000 people live in the city of Netanya (for year 2007: <u>200,640</u> ). Population density, average – 6.9 people per 1,000 sq.m.
A.4	<b>Socio-economic status / activities</b>	Netanya is a thriving town with a large economic growth based on tourism and IT. Quantitative information will be provided in due course.
A.5	<b>Institution</b>	The Economic Company for Development & Tourism Netanya-HALAT is a well established and independent wholly owned company of the Netanya municipality with considerable resources and expertise as it has developed and is developing and implementing the municipality's investment programme and is managing most of its assets.
A.6	<b>Financial Situation</b>	The municipality relies on its own resources as well as government subsidies and grants. HALAT has considerable experience on PPP and local financing institutions.
B. PROBLEM ANALYSIS		
B1		<ul style="list-style-type: none"> <li>• Air pollution affecting the city and the inhabitants by the non controlled bio-gas emissions from the landfill.</li> <li>• Contamination of groundwater and sea water by leachates from the landfill.</li> <li>• An ugly spot in the city's environment..</li> <li>• An attractive spot for waste collectors to dump..</li> <li>• Danger of fires.</li> </ul>

	<ul style="list-style-type: none"> <li>• Hampers the town's economic development</li> </ul>	
<b>C</b>	<b>THE PROJECT</b>	
<b>C.1</b>	<b>PROJECT OVERVIEW</b>	
	<p><b>LFMR project – Landfill Mining and Reclamation, stages:</b></p> <ul style="list-style-type: none"> <li>• Excavating bio-degraded solids wastes from the landfill site.</li> <li>• Mechanical separation to different phases- undersize, oversize.</li> <li>• Recycling of the different outputs for different uses - material for site development, other recyclables uses.</li> </ul>	
<b>C.2</b>	<b>PROJECT BACKGROUND</b>	
	<p>The present landfill occupies a total of some 200,000 m<sup>2</sup> on which private people own plots for building houses. In the present situation, with the site filled 25-40 m deep with solid waste, it is impossible to use the land. The court dictated to the Netanya municipality a strict time table for cleaning the area or solving the land owners' problems, but the municipality has not met this time frame. Consequently, the municipality pays expensive fines to the land owners.</p>	
<b>C.3</b>	<b>PROJECT RATIONALE</b>	
<b>C.4</b>	<b>EXPECTED RESULTS</b>	
	<p><b>Environmental</b></p> <ul style="list-style-type: none"> <li>• Clean air.</li> <li>• Clean sea shore.</li> <li>• No water pollution.</li> <li>• No health risks.</li> <li>• Better visual aspect of the town</li> </ul> <p><b>Institutional and Organisational</b></p> <ul style="list-style-type: none"> <li>• Applying new urban development plans in the area by the Netanya municipality.</li> <li>• Solving the conflict with the present land owners.</li> <li>• Acting according to the court decisions.</li> </ul> <p><b>Socio-economic</b></p> <ul style="list-style-type: none"> <li>• The socio-economic impact of this project will be considerable.</li> <li>• It will improve the citizens' quality of life.</li> <li>• It will eliminate the town's exposure to legal penalties.</li> <li>• It will enhance the municipality's image as a tourist destination and create new job opportunities.</li> </ul> <p><b>Financial</b></p> <ul style="list-style-type: none"> <li>▪ Enabling the municipality of Netanya to market the new reclaimed land to profit uses.</li> <li>▪ Solving the expensive conflict with the present land owners.</li> <li>▪ Stop penalty payments.</li> <li>▪ Create additional income to the municipality</li> </ul>	
<b>C.5</b>	<b>POLICY CONSIDERATIONS</b>	
	<b>Evidence of commitment at local and national level</b>	Evidence of commitment at local and national level
	<b>Demonstration value or significance in</b>	Demonstration value or significance in relation to sector development (WW, SW)

	<b>relation to sector development (WW, SW and/or IE)</b>	and/or IE)
	<b>Linkage to sectoral policies, strategies and action plans</b>	Linkage to sectoral policies, strategies and action plans
	<b>Programme/ project approach</b>	Programme/ project approach
<b>C.6</b>	<b>INSTITUTIONAL</b>	
	<b>Enforcement of environmental legislations</b>	Legislation is under preparation and is expected to be turned into law within 2010.
	<b>Promoter:</b>	The Economic Company for Development & Tourism Netanya-HALAT.
	<b>Assessment of promoter's capacity</b>	The promoter has considerable capacity to develop and implement the project.
<b>C.7</b>	<b>FINANCIAL</b>	
	Volume of solid waste estimated in the landfill - 2,000,000 cu.m Cost for mining, screening, handling, transporting, site reclamation etc. incl. Design, management & supervision - 17.5€ per cu.m Total estimated cost 35,000,000.	
	<b>Loan amount</b>	20 million Euros.
	<b>Availability of government funding</b>	To be determined.
	<b>Financial sustainability</b>	A detailed feasibility study should be conducted.
	<b>IFI interest</b>	
	<b>Donor interest (availability of grants)</b>	None requested.
<b>C.8</b>	<b>TECHNICAL</b>	
	<b>Status of studies and permits</b>	To be determined.
	<b>Additional studies and TA requirements</b>	<ul style="list-style-type: none"> <li>• Feasibility study.</li> <li>• Technical documentation.</li> </ul>
<b>C.9</b>	<b>SOCIO-ECONOMIC IMPACT</b>	
	The socioeconomic impact of the project is considerable as described above.	
<b>C.10</b>	<b>ENVIRONMENTAL IMPACT</b>	
	The environmental impact of the project is considerable as described above.	
<b>C.11</b>	<b>OPPORTUNITIES &amp; RISKS</b>	
	<b>Opportunities</b>	To be completed
	<b>Risks</b>	Detailed analysis to be made
<b>C.12</b>	<b>PROJECT READINESS</b>	
	<b>Budget: Implementation plan</b>	<b>Technical:</b> two large scale pilot projects have been done in the last 5 years and applied in the site in order to learn the effectiveness of the LFMR technology used. Conclusions will be applied in the final project specifications.

**Implementation plan & tender documentation:**

No engineering plans nor tender documentation have been prepared yet.

**ANNEX 2 - CONTACT PERSONS**

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<b>ANNEX 3 - MAPS</b>
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**Photo of the landfill area by the coast – a barrier for development**





**Photo of the waste in the landfill – beside the sea shore**



**The new urban plan for the area after the waste evacuation**

