

IDC Herzliya Conference

Israel's Role in Reducing Global Oil Dependency

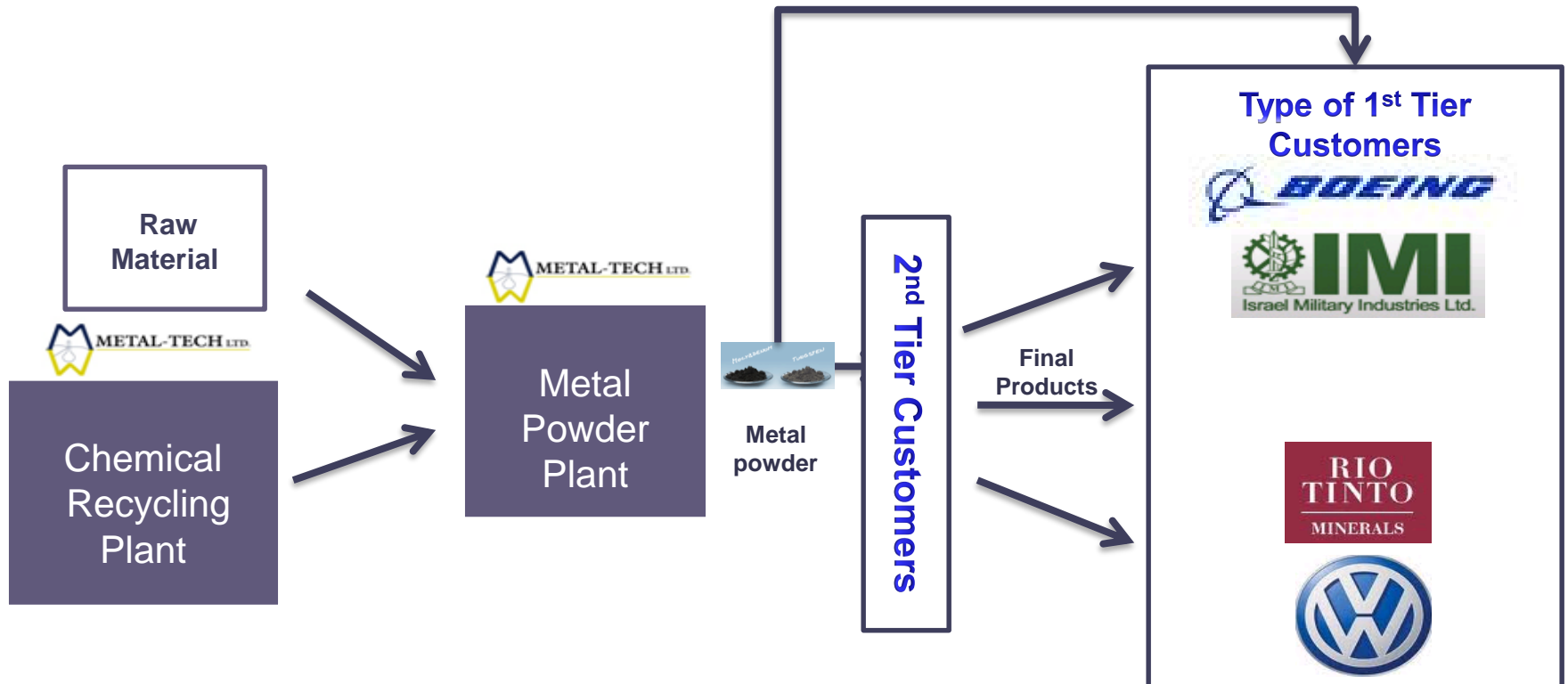


Israel Recycling Plant
Ramat-Hovav

February 2011

Company General Overview

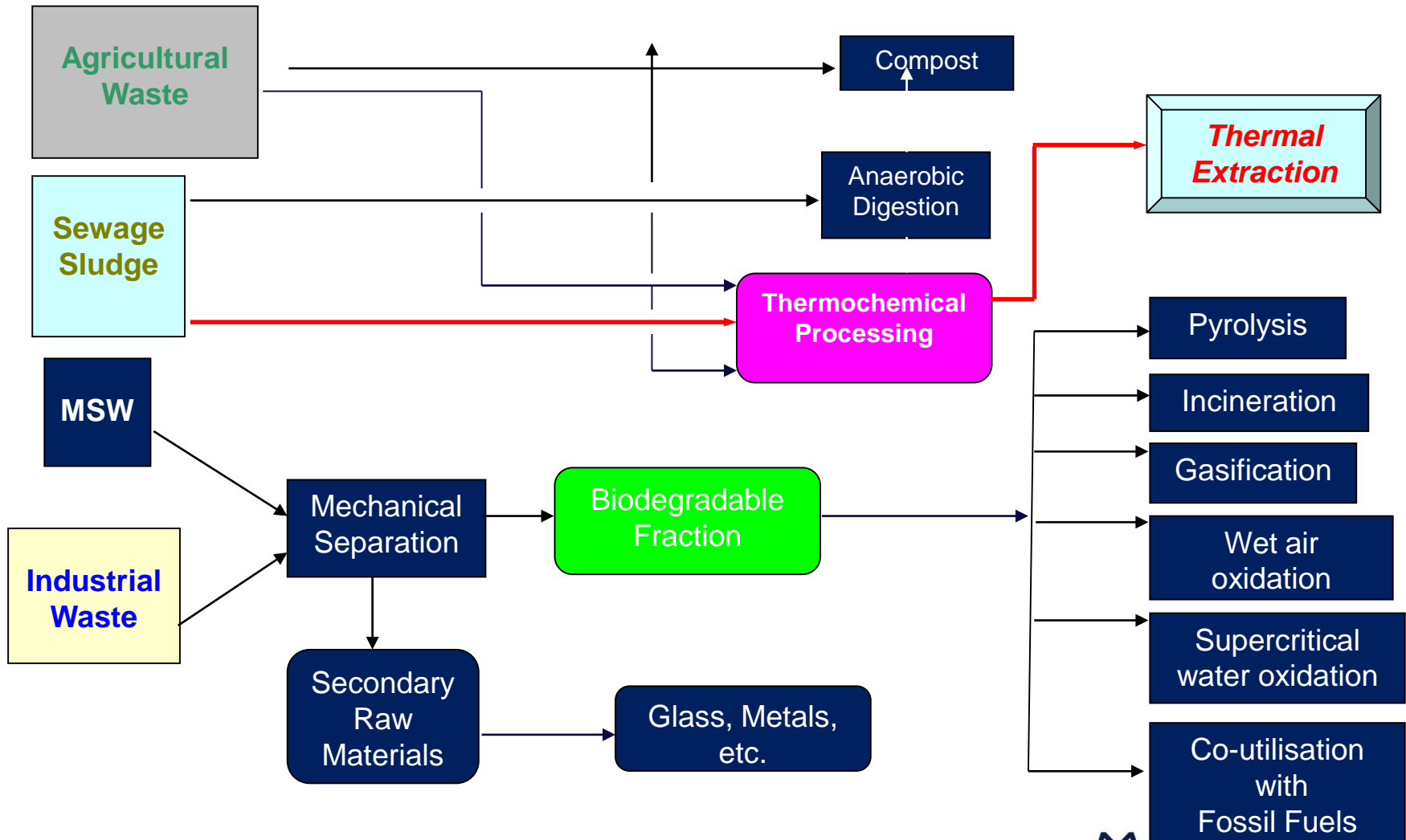
- Technology based company, chemical conversion of waste into high value products
- Well established, 1990, recycling and producer of high quality and strategic metal powders
- International business about 50mill \$ sales in Europe, USA and other parts of the world
- Well experienced in implementing its own R&D into industrial projects.



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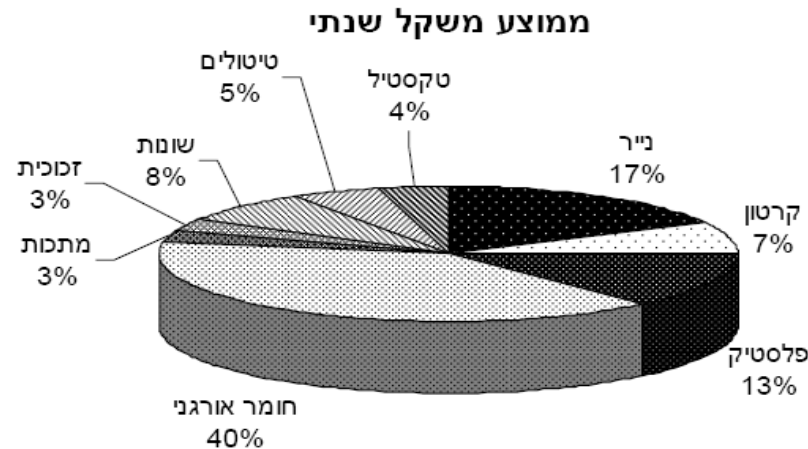
- Company's cutting edge – developing technologies to produce high value products from low grade materials, amongst handful companies
- Fully certified by ISO 2000, 14,000 ,18,000
- Metal based Projects
 - Recycling and production of special metals from low grade material in the Israel plant.
 - Recycling of Lithium batteries, in Israel
 - Build up of two international plants in Uzbekistan and Mongolia of producing Molybdenum
 - Currently in industrial pilot phase with one of the biggest copper companies in the world, demonstrating a novel hydrometallurgy technology to recover and produce high quality metals mining low grade and waste stream
- Oil Alternative projects – In our R&D efforts we utilize our knowledge and know how in recycling to other fields (rather than just the metals field):
 - Methanol fuel cell start up
 - Waste to fuel turning organic waste such as sewage, tires, MW to fuel
 - EV battery recycling

Organic Wastes Treatment for Recovery Processes



i.e. – Turning sewage and municipal waste to fuel

- Estimated the MSW and sludge waste in Israel 5 Million Tons:



- more than 50% of its organic content can be recycled into synthetic oil!

Metal Tech From waste to fuel

- Thermal extraction using hydrogen donor solvent
- Able to treat wide range of waste – sewage, tires, general plastics, municipal, industrial.
- Higher fuel recovery than pyro system – 20%
- Lower temperatures – 350 versus 500C
- Beta stage to be started.

Israel as a technology based country

- Metal Tech in the mid 90 identified the huge asset of the knowledge within the chemical engineering and metallurgy that was brought by the Russian immigration
- Metal tech employs about 140 qualified personal in its Ramat Hovav plant
- The idea of fusing the eastern know how and technologies with western management and engineering is a unique asset
- Metal-tech experience in implementing its R&D into actual industrial projects.
- Hi Tech in the traditional industry, raw materials, fuel, energy, metals etc. rather than IT.

Main barriers to develop a technology in Israel

- Much appreciation of the Israeli Chief Scientist , not everything in Israel is bad!
- However, Chief scientist grants finance mainly HR costs rather than Capital investments, needed for Beta site.
- High Beta site cost and lack of funds.
- Pilot project require permits similar to industrial projects.

- **Israel must reevaluate its R&D subsidy if it seeks to be a world leader in the oil alternative technologies .**
- **We did it once we can do it again**