



# RESOURCE EFFICIENCY IN URUMQI (China)

## ACTION BRIEF

CODE: URU-AB4

## DEVELOPMENT OF WASTE MANAGEMENT SOFTWARE FOR INDUSTRIAL PARKS

TOPICS:  
**RESOURCES**  
**GOVERNANCE**  
**CAPACITIES**

### CHALLENGE

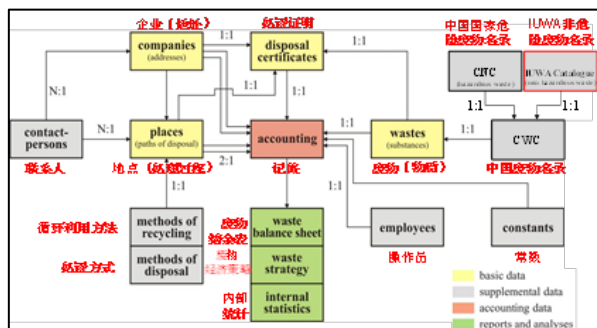
Within the last few years, Urumqi's industry has not only developed greatly in terms of production output, but it has also shifted from a resource extracting to a resource transforming industry by enlarging and expanding the material chains in terms of quantity as well as quality. The present situation can be described as a fast growing throughput economy. Undesirable output is considered as waste and is largely deposited in landfill sites. Furthermore, there is little selection or separation of this primary waste. In April 2005, the cornerstone for the largest industrial park (IP) in Western China, covering a surface area of

108 km<sup>2</sup>, was laid in Midong on the outskirts of Urumqi-City. Due to the exceptional richness of the Urumqi Region in coal, oil, natural gas and salt, industrial development is based on huge quantities of raw materials, which are to be transformed into preliminary products in the first stage of the IP development before being converted into final products in the near future. The ambitious project is in accordance with the Chinese Central Government's intention to accelerate economic growth in the west of the country.

### ACTION

Industrial material flow management is able to contribute substantially to an increase in resource efficiency by systematically promoting the recycling and reuse of materials and components. With this objective, the German-Sino partners decided to develop a waste management software - the "IUWA Waste Manager"- that aimed to meet both the individual company's internal needs regarding waste related information and analysis as well as the requirements for inter-company exchange and coordination. As the entity relationship model shows, the software is composed of a set of connected tables consisting of basic data entries, e.g. information on substances, waste companies and places involved in the disposal process as well as accounting data. Based on this data, the IUWA Waste Manager offers a wide variety of reports

and data analysis functions. In order to increase its applicability as an instrument for the support of the sustainability-oriented management of waste, we included a detailed table of indicators as part of the software, which is calculated automatically. Beyond the integration of the official Chinese Catalogue of Hazardous Waste, a substantial part of the software is the catalogue of non-hazardous waste, which did not exist before in China. It has been created specifically for this purpose and is based on an official OECD catalogue. Some companies of the Midong Industrial Park, such as ZhongTai Chemical Co. (a global player in the PVC industry), have already implemented the IUWA Waste Manager and work with it. Thus, numerous waste data in terms of qualities and quantities have already been structured and are accessible.



Entity-Relationship-Model IUWA Waste Management Software



Main Menu IUWA Waste Manager

## RESULTS

### STATE OF IMPLEMENTATION:

- The IUWA Waste Manager has been implemented in several companies in the Midong Industrial Park and delivers reliable, structured data to support a sustainability-oriented waste management strategy
- A catalogue for the standardised recording and management of non-hazardous waste (which did not exist in China until now) has been integrated into the software
- Ongoing basic and advanced training for software users in capacity building events such as workshops or training days

### LOCAL USERS / TARGET GROUPS:

- Companies in Midong Industrial Park
- The Xinjiang Academy for Environmental Protection Sciences (XJAEPS), the Department of Environmental Protection (DEP) Xinjiang as the authority responsible for environmental protection in the industry

### IMPACTS:

- Companies have access to basic information for the systematic realisation of circular economy. This serves as a good starting point for recognising exchange possibilities and thus saving of resources and improving production
- The software helps companies meet the legal requirements governing the recording and management of data efficiently and with

precision. Therefore, it also supports compliance with legal standards

- The categorisation of non-hazardous waste allows for the identification and development of significant potentials of circular economy

### MULTIPLICATION:

- XJAEPS und DEP Xinjiang want to promote the software using letters of recommendation, so that it might be implemented in enterprises in other industrial parks in the future
- The use of the Waste Manager software in industrial enterprises in the relevant areas of the XJAEPS and the DEP supports the implementation and strengthening of circular economy, as laid out in the *The Circular Economy Promotion Law* and in the current 5 year plan

### LONG-TERM CONSOLIDATION:

- Extending the application of the software to other companies outside Midong increases the possibilities of circular economy and for saving resources
- The software, which until now has only been used intra-corporately, should also be used in the future on an inter-corporate basis, e.g. on the industrial park level to record relevant material flows needed for a sustainable waste management

## CONTACT

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