



# Reducing the Risk of Chemical Clusters by Formation of Chemical Parks

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## Organisational Forms of Chemical Sites

Big chemical sites have grown differently

- In Europe: big single-owner sites up to end of 20<sup>th</sup> century, many of them now splitting up to multiple enterprises within chemical parks
- In India: multiple small & medium enterprises have grown together to chemical clusters
- Both Parks and Clusters have an aggregated risk, for which no clear responsibility exists
- Parks have a common infrastructure, Clusters not



## Regulations for Chemical Parks in Europe

- EU Seveso II regulation (covering major hazard sites)
  - All risks from neighbouring sites (as well as from traffic lines, environment etc) have to be considered
  - Neighbouring “Seveso-sites” may be defined as “Domino-sites” by the competent authority, leading to obligations regarding cooperation between them
  - The way how Parks are managed is not regulated



## Guidelines for Chemical Parks in Europe

- German Commission on Process Safety
  - “Round Table” advising the German Federal Government
  - Guidance SFK-GS-44, download at [www.kas-bmu.de](http://www.kas-bmu.de)
- European Process Safety Centre
  - Network funded by 40 mainly European based (petro-) chemical multinational companies
  - Report “Process Safety / Risk Management of Chemical Parks in Europe” available on request ([www.epsc.org](http://www.epsc.org))



## Safe Management of Parks: European Approach

- Adoption of “best practices” from safe operation of big single-owner sites
  - **Maintaining the common infrastructure**
  - **Managing the accumulated risk**
- Obligation of close cooperation of all Park users
  - **Clear structures and procedures**
  - **Based on contractual agreements under private law**
  - **Audited by authorities**



## German/European Policy in IDRM in Chemical Parks

- Legal requirements (EU Seveso II)
  - each individual operator has to have emergency management system
  - Operators have to provide information for external disaster management authorities
- “Best Practice” (e.g. German guidance SFK-GS-44)
  - Joint emergency management for the whole Park
  - Joint fire brigade organised by infrastructure operator
  - Best option to control the Park s overall risk



## **Case Study: Hoechst Chemical/Industrial Park (Germany)**

- Infrastructure company (owned by major operators) responsible for emergency management and fire brigade**
- Joint Disaster Management Plan for the Park**
- Joint command centre**
- 24hrs/7 days service of “Emergency Managers” and medical centre**
- Senior managers from Park users act as Emergency Director in case of major incidents**
- Internal command with Park Fire Chief and Emergency Director. Authority may take over in case of outside impact**
- Costs are shared according to risks**



## Further Principles for Safe Management of Parks (1)

- **Safety Management System (SMS)**
  - **Intrinsic conflict between the interests of global companies and the Park**
  - **Global companies strive to have a uniform SMS**
  - **Some parts of the SMS should be Park specific, e.g. hazardous works, PPE, contractor management**
  - **Differences in SMS have to be communicated, e.g. in a “Park Safety Committee”**



## Further Principles for Safe Management of Parks (2)

### ■ Security

- **“Best Practice” is a joint security service and a perimeter fence for the whole Park**
- **High risk/vulnerability areas may need additional security**

### ■ Inspections by Authorities

- **“Joint services” should be inspected “only once”**
- **Contractual agreements for safe operation of the Park have to be reviewed**



## Conclusion

- Chemical (Industrial) Parks are safe and economic
  - **Good cooperation and open communication is a must**
  - **Clear contractual agreements are necessary**
- Chemical (Industrial) Clusters should be transformed in Parks
  - **Creating a joint infrastructure is highly efficient (and a business model!)**
  - **Joint disaster management avoids interface problems**
  - **“Lessons learnt” from Europe may help**



***Thank you for your attention!***