



## GrDF ASSET MANAGEMENT STRATEGY NEW TOOLS FOR RISK, INVESTMENT AND MAINTENANCE MANAGEMENT

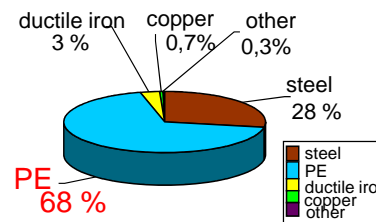
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### GrDF – a subsidiary of the GDF SUEZ Group with industrial assets

**188,700 km of network and...**



Family of facilities (assets)	Facilities (in number of units)
Network pressure-reducing station	20,000
Customer supply station	120,000
Individual service line	6,500,000
Collective service line	800,000
Network valve	270,000



### Asset management practices at GrDF :

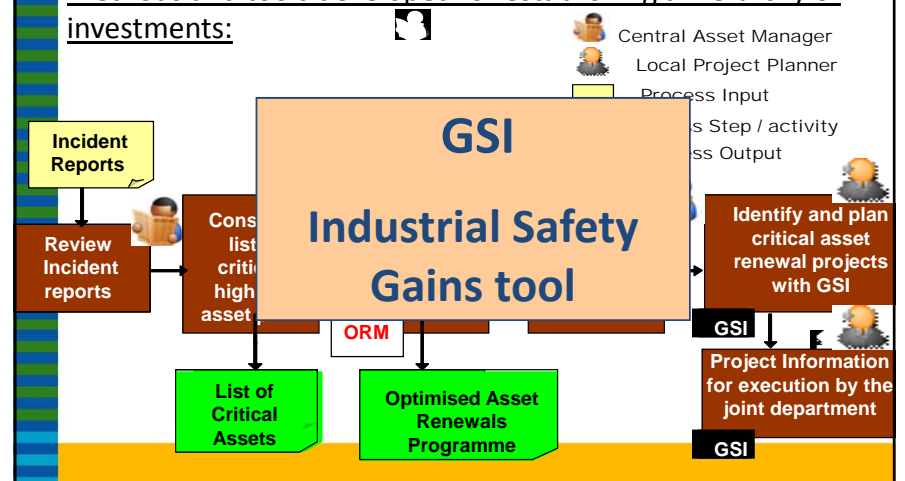
#### a consolidation of the fundamentals of asset management

- ✓ listing assets
- ✓ enhancing the geographical information system (GIS)
- ✓ establishing a Computerized Maintenance Management System (CMMS)
- ✓ developing an effective feedback procedure

#### Improving the management and relevance of maintenance and investment programmes



### Methods and tools developed for establishing a hierarchy of investments:





### Principles of the GSI

#### **GSI = Avoided costs / Investments**

Integrating three major criteria :

- ✓ safety
- ✓ maintenance in operational conditions (operating charges)
- ✓ continuity of service

Economic valuation of avoided costs based on full cost approach including:

- ✓ direct costs
- ✓ indirect costs
- ✓ induced costs



### Input data for quantification of the different gains

- ✓ Network technical description: facilities, customers
- ✓ Description of network environment : population, homes
- ✓ Failure data defined per nature of incident and type of facilities
- ✓ Economic valuation of consequences of each nature of incident
- ✓ Operating & Maintenance costs

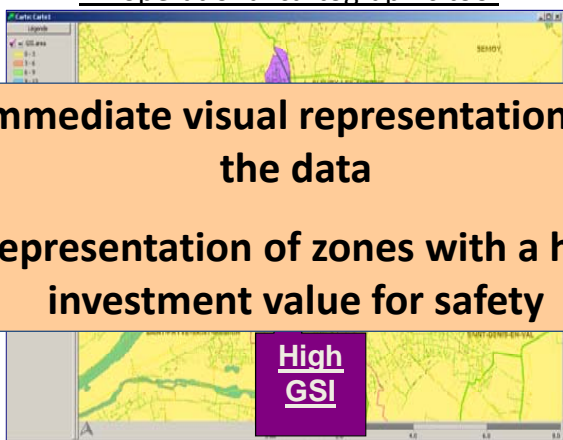


### An operational cartographic tool

Immediate visual representation of the data

Representation of zones with a high investment value for safety

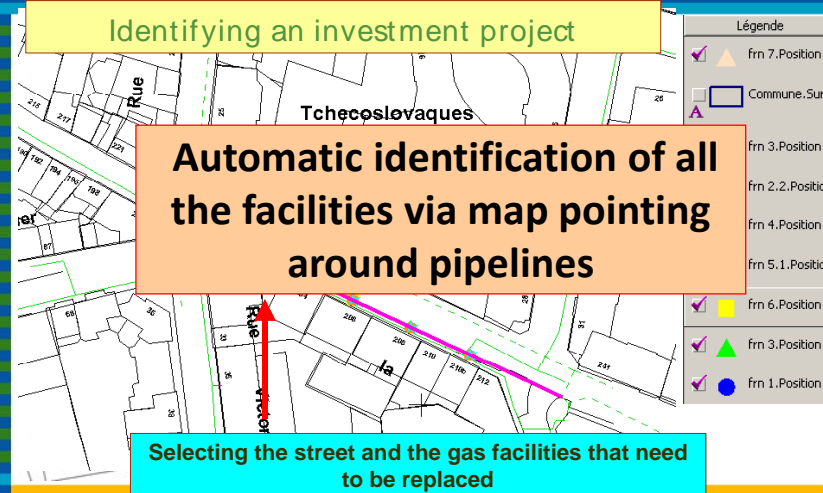
High  
GSI



### Identifying an investment project

Automatic identification of all the facilities via map pointing around pipelines

Selecting the street and the gas facilities that need to be replaced



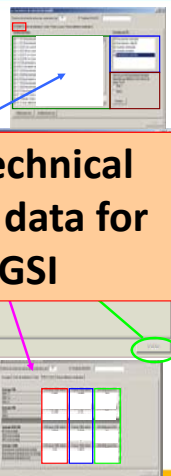


Selecting assets  
which will be  
replaced

**Validation of the technical  
and economic input data for  
calculating the GSI**

and  
induced  
costs

failure rate &  
corrective  
maintenance cost  
of the assets



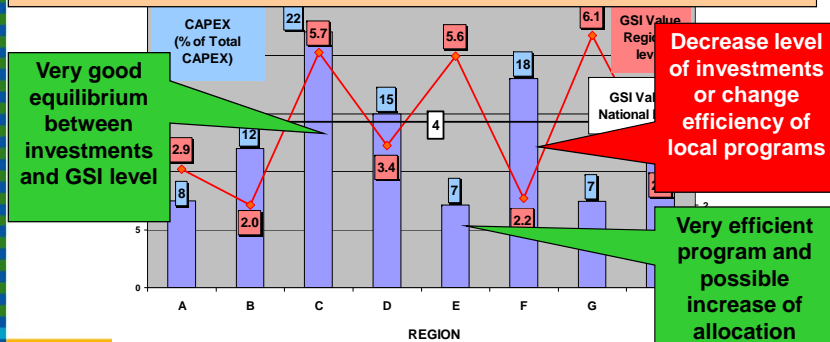
### Gains related to the asset management process

- ✓ general factoring-in of the **full cost**,
- ✓ improved **visibility** of the structure of investments,
- ✓ **expected gain** in terms of risk management .



### Gains related to the asset management process

**4,000** annual GSI studies and regional medium values feedback used for future regional allocation of investments,



### Future developments of GrDF asset management tools

- ✓ implement the principles of the cost/risk analysis for maintenance strategies
- ✓ improve the modelling of forecasts of failures of the gas facilities ,
- ✓ refine the input parameters and the operating charges and maintenance costs ,
- ✓ and in the long term, **achieve a general and integrated decision-making solution.**



### Conclusion

- ✓ use **the same tools** to optimising the efficiency of our investment and maintenance policies **at all levels**,
- ✓ facilitate **acceptance** of different allocations of resources in an **objective manner**,
- ✓ be in position to demonstrate our ability to be a **legitimate player** using regulated revenues as **efficiently** as possible
- ✓ develop GrDF **asset management tools** on the basis of a **very operational and pragmatic rationale**.