



***4th INTERNATIONAL CONFERENCE***  
***“TO PROTECT OUR GLOBAL ENVIRONMENT FOR***  
***FUTURE GENERATIONS”***

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# PYROLYSIS TECHNOLOGY RESEARCH CENTRE



LEGISLATIVE ASPECTS OF THERMAL WASTE TREATMENT

AS PART OF BASIC RESEARCH DEVELOPMENT IN THE PYROLYSIS  
TECHNOLOGY RESEARCH CENTRE

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- SZIE Tessedik Campus (located in Szarvas) has won a funding from the Social Renewal Operational Program of the New Széchenyi Plan (EU Cohesion Fund)
- „Basic Research Development in the Pyrolysis Technology Research” (TÁMOP-4.2.2.A-11/1/KONV-2012-0015).
- Research group: national and foreign researchers, Professors of Hungarian Academy of Sciences, young researchers, PhD students and entrepreneurs.

# AIM OF THE RESEARCH CENTRE

- Establishing an independent technological knowledge base
- Able to analyze and evaluate existing and new future pyrolysis technologies and methods
- Able to evaluate and qualify the end-products and environmental releases of certain technologies through independent and objective measurements
- Working out an appropriate testing and measuring systems
- Qualifying methods and examinations needed for the advising process.

# OBJECTIVE OF LEGAL OVERVIEW

- To collect all legal acts in EU, the USA and Hungary concerning thermolysis
- To identify legislative gaps and demonstrate good practices
- To establish a unified, sound standpoint on thermolysis
- To work out professional policy recommendation package

# TYPES OF ANALYSED LEGAL PIECES



- Technical legislations
- Economic tools
- Industrial property rights and patent law

# MILESTONES

- ✓ Overview of thermal cracking technologies in EU, national technical and economic regulations, permitting procedures
- ✓ Survey of economic regulatory schemes for products of thermal cracking waste management procedures and their sale possibilities
- ✓ Compilation and analysis of best regulatory practices and problems in EU Member States (European Court of Justice decisions)
- ✓ Compilation of industrial intellectual property rights
  - Working out policy recommendation package
    - ▣ large-scale consultation with experts, authorities and civil organisations
  - Final study, including recommendation package

# TOPICS OF TECHNICAL LEGISLATION

- Licensing
- Operation phase
  - Waste acceptance criteria
  - Technology requirements
  - Emissions
- Inspection
  - Data supply and reporting
- Closure of installation



# LICENSING

- **General conditions of licensing:** in the Waste Law and its implementing rules
  - ▣ Site licensing, waste incineration, permit of waste management activities, administrative procedure rules and if required, animal by-product legislation
- **Special conditions of licensing:** a Environmental impact assessment as set out in Environment Act, BAT, licence of industrial pollution prevention control (IPPC)

*If a significant environmental impact*

- ▣ **Environmental impact assessment:** mandatory for IPPC license or if IPPC permit is not required, EIA and preliminary investigation can be prescribed by authority
- ▣ depends on the characteristics of facilities, environmental impact, affected area

# OPERATIONAL PHASE

## □ **Waste acceptance criteria:**

- Prior accepting of the incoming waste, determination of mass and waste characterisation for each type of waste, and identification of the waste category according to the list of waste
- For hazardous waste representative sampling and quick tests

## □ **Plant operation:**

- TOC of slag and bottom ashes must be less than 3%, or loss of ignition is less than 5% of the weight of the dry residue
- Technological parameters: gas temperature 850 ° C for min. 2 mp, waste with more than 1% of organic chlorine 1100 ° C, the inspectorate may grant a derogation

## □ **Air pollutant emission limits:**

- According to the legislation of the **Waste Incineration**

# INSPECTION

## □ **Monitoring:**

- Frequency specified in the permit, emissions, and environmental conditions regularly measured (methods, standards)

## □ **On-site recording:**

- According to the decree on the recording and reporting obligations for waste, on waste generation and treatment

## □ **Reporting:**

- According to the different reporting systems: HIR, LAIR, (FAVI)

## □ **Inspection by authority:**

- Control of data supply, on-site inspection
- Administrative Procedure Rules

# CLOSURE OF INSTALLATION

- ***According to the Industrial Emission Directive:***
  - After 7. 01. 2013. baseline status report for the new licences
  - Minimum content of the report: information related to the current and any prior use of the area, information on the current status and baseline measurements
  - In case of closure end-status report is also required
  - If necessary, remediation tasks must be accomplished in view of the current and the approved future land use

# ECONOMIC REGULATORY TOOLS

- Economic regulations pertaining to waste generation
  - ▣ product charge, take back obligation, extraction tax
- Economic regulations pertaining to waste treatment
  - ▣ landfill tax, environmental load fee, financial guarantee, and financial provisioning
- Economic regulations pertaining to the end products
  - ▣ excise tax, green power takeover

# WASTE GENERATION

## □ ***Product charge:***

- In the case of packaging, tyres and electronic waste, it limits the amount of available materials for thermolysis, except sorting residues
- Input materials for thermal waste treatment should be found in other waste streams, such as: RDF from mixed household waste, bio-waste, plastic components of construction and demolition waste, end-of-life vehicles

## □ ***Take back obligation:***

- At the moment under consideration
- Reduces the available material (plastics)

# WASTE TREATMENT

## □ ***Landfill tax:***

- Introduced in 2013
- Facilitates the thermal recovery

## □ ***Environmental load fee (air, water and soil):***

- Any producer, who performs waste recovery, can reduce its load fee of air and water by percentage of waste fraction used
- Facilitates the thermal recovery

## □ ***Financial guarantee and financial provisioning:***

- Imposed on waste generators and treatment installations
- When establishing, licensing and operating thermal waste recovery plan, these additional expenses should be considered

# END-PRODUCT

## □ **Excise tax:**

- „Other petroleum products” fall within the scope
- Use for cogenerated thermal and electrical energy is tax-free
- Use as fuel is under taxation, except if under experimental development the generated biofuels is mixed to gasoline or diesel oil
- Excise assurance: reduced rate for waste management facilities

## □ **Green power takeover:**

- Obligatory purchase cost of electric energy derived from waste is advantageous



# INDUSTRIAL PROPERTY RIGHTS

- ***Variety of industrial property rights:***
  - Patented technical solutions
  - Utility model protection
  - Design protection
  - Protection expiry: supplementary protection
  
- ***The process of enforcing patent rights:***
  - Formal investigation procedure
  - Substantive examination stage
  - Grant of a patent

# CONCLUSION

- Waste management procedures based on thermolysis may play a major part in the waste management hierarchy
- No comprehensive regulatory environment exists which would allow a general overview of the technical regulations of such technologies, no direct regulation for thermal treatment procedure
- This fragmentation is true not only for Hungarian regulations, but for EU-level regulations as well
- Therefore it is increasingly difficult for those who wish to install or use such technologies to navigate through in the thick of the law

# CONCLUSION

- A detailed, comprehensive study is available which can guide the interested researchers and practitioners within the Hungarian and EU legislation
- It points out lots of problematic subjects and contradictions
- The economic regulatory tools should be more supporting
- Simplification and harmonisation is necessary

# FURTHER STEPS



- Locate of the shortcomings of the regulations
- Compile policy recommendation package
- Perform public and stake-holder consultation
- Make available for the policy makers

THANK YOU FOR YOUR ATTENTION

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