



**Country Waste Profile Report for
HUNGARY
Reporting Year: 2008**

*For guidance on reading Country Waste Profile Reports,
please refer to the following internet based document:*

<http://www-newmdb.iaea.org/help/profiles9/guide.pdf>

*For further information, please contact the Responsible Officer via e-mail:
NEWMDB@IAEA.org*

Waste Classification Schemes

Country: HUNGARY

Reporting Year: 2008

Waste Class Matrix: **IAEA Def.**

This country does use the IAEA Scheme: No

Description: The Agency's standard matrix

| Waste Class Name | Distribution % | | |
|------------------|----------------|---------|-------|
| | LILW-SL | LILW-LL | HLW |
| LILW-SL | 100.0 | 0.0 | 0.0 |
| LILW-LL | 0.0 | 100.0 | 0.0 |
| HLW | 0.0 | 0.0 | 100.0 |

Waste Class Matrix: **PNPP**

Description: Solid_LL: solid, low level
 Solid_HL: solid, high level
 Liquid_EC: liquid, evaporator concentrate
 Liquid_RE: liquid, resin
 Liquid_O: other liquid

| Waste Class Name | Distribution % | | |
|------------------|----------------|---------|------|
| | LILW-SL | LILW-LL | HLW |
| Solid_LL | 100.0 | 0.0 | 0.0 |
| Solid_HL | 20.0 | 70.0 | 10.0 |
| Liquid_EC | 90.0 | 10.0 | 0.0 |
| Liquid_RE | 40.0 | 60.0 | 0.0 |
| Liquid_O | 95.0 | 5.0 | 0.0 |

Waste Class Matrix: **PURAM**

Description: The Hungarian radioactive waste categorization laid down in the Decree of the Minister of Health, Social and Family Affairs 47/2003 (VIII.8.) (see: general info /regulations) identical to the Agency's categorization scheme. In the context of waste storage & disposal this categorization is used.

| Waste Class Name | Distribution % | | |
|------------------|----------------|---------|-------|
| | LILW-SL | LILW-LL | HLW |
| LILW-SL | 100.0 | 0.0 | 0.0 |
| LILW-LL | 0.0 | 100.0 | 0.0 |
| HLW | 0.0 | 0.0 | 100.0 |

Attachment **#1370: Waste Matrix**

comment_waste.class.pdf

a chapter of the 2nd National Report prepared in 2005 for the Joint Convention review meeting last year describing the PURAM waste class matrix.

Attachment **#1371: Waste Matrix**

47_2003ESZCISM.pdf

An unofficial English translation of the Decree of the Minister of Health, Social and Family Affairs 47/2003 describing the classification of radioactive waste in Hungary. (See Appendix 2 of the decree.)

Waste Classification Schemes

Country: HUNGARY

Reporting Year: 2008

Definition of «unprocessed waste» and «processed waste»:

This country uses the IAEA standard definition:

| | as-generated waste | processed for handling | processed for storage | processed for disposal |
|--------------------|--------------------|------------------------|-----------------------|------------------------|
| Unprocessed means: | x | | | |
| Processed means: | | x | x | x |

Groups Overview

Country: HUNGARY

Reporting Year: 2008

| | |
|---------------------------|---|
| Reporting Group: | PNPP |
| Inventory Reporting Date: | December 2008 |
| Waste Matrix Used: | PNPP |
| Description: | Paks Nuclear Power Plant operational radioactive waste stored on-site |

| Site Name | Facility Name | Facilities Defined | | |
|-----------|---------------|--------------------|---------|--|
| Paks | Compaction | processing | | |
| | Evaporat. | processing | | |
| | PaksStore | | storage | |

| | |
|---------------------------|--|
| Reporting Group: | PURAM |
| Inventory Reporting Date: | December 2008 |
| Waste Matrix Used: | PURAM |
| Description: | Public Agency for Radioactive Waste Management |

| Site Name | Facility Name | Facilities Defined | | |
|------------|---------------|--------------------|---------|----------|
| Bátaapáti | DISPOSAL | | | disposal |
| Püspökszil | SSRS | | | disposal |
| | STORAGE | processing | storage | |
| | VAULTS | processing | | disposal |

Site (Structure) : Paks

Country: HUNGARY

Reporting Year: 2008

Full Name: Paks Nuclear Power Plant

Location: Paks

Description:

Official Website:

License Holder(s): Paks Nuclear Power Plant Ltd.

Waste management facilities that are located at this site:

| Facility: | Compaction | | | | | | | | | | | | | | | | | | | | |
|---|-------------------------|---------|--|-------------|--------|---------|----------|-----|-----|----------|----|----|-----------|----|----|-----------|----|----|----------|----|----|
| Description: | solid waste compression | | | | | | | | | | | | | | | | | | | | |
| <p>Processing part of facility Compaction</p> <p>The following shows processing status for waste classes and SRS.</p> <table border="1"> <thead> <tr> <th>Waste Class</th> <th>Actual</th> <th>Planned</th> </tr> </thead> <tbody> <tr> <td>Solid_LL</td> <td>Yes</td> <td>Yes</td> </tr> <tr> <td>Solid_HL</td> <td>No</td> <td>No</td> </tr> <tr> <td>Liquid_EC</td> <td>No</td> <td>No</td> </tr> <tr> <td>Liquid_RE</td> <td>No</td> <td>No</td> </tr> <tr> <td>Liquid_O</td> <td>No</td> <td>No</td> </tr> </tbody> </table> | | | | Waste Class | Actual | Planned | Solid_LL | Yes | Yes | Solid_HL | No | No | Liquid_EC | No | No | Liquid_RE | No | No | Liquid_O | No | No |
| Waste Class | Actual | Planned | | | | | | | | | | | | | | | | | | | |
| Solid_LL | Yes | Yes | | | | | | | | | | | | | | | | | | | |
| Solid_HL | No | No | | | | | | | | | | | | | | | | | | | |
| Liquid_EC | No | No | | | | | | | | | | | | | | | | | | | |
| Liquid_RE | No | No | | | | | | | | | | | | | | | | | | | |
| Liquid_O | No | No | | | | | | | | | | | | | | | | | | | |
| Type: | Treatment | | | | | | | | | | | | | | | | | | | | |
| Year opened: | 1988 | | | | | | | | | | | | | | | | | | | | |

Site (Structure) : Paks

Country: HUNGARY

Reporting Year: 2008

| Facility: | Evaporat. | | |
|--|--------------------------|------------------|--|
| Description: | Liquid waste evaporation | | |
| Processing part of facility | | Evaporat. | |
| The following shows processing status for waste classes and SRS. | | | |
| Waste Class | Actual | Planned | |
| Solid_LL | No | No | |
| Solid_HL | No | No | |
| Liquid_EC | Yes | Yes | |
| Liquid_RE | No | No | |
| Liquid_O | Yes | Yes | |
| Type: | Treatment | | |
| Year opened: | 1985 | | |

Site (Structure) : Paks

Country: HUNGARY

Reporting Year: 2008

| | |
|---------------------|-------------------------------|
| Facility: | PaksStore |
| Description: | Storage for operational waste |

Storage part of facility**PaksStore**

The following shows storage status for waste classes and SRS.

| Waste Class | Actual | Planned |
|-------------|--------|---------|
| Solid_LL | Yes | Yes |
| Solid_HL | Yes | Yes |
| Liquid_EC | Yes | Yes |
| Liquid_RE | Yes | Yes |
| Liquid_O | Yes | Yes |

| | |
|------------|----|
| List SRS? | No |
| List UMMT? | No |

| | |
|-----------|--|
| Capacity: | 1500 m3 for solid_LL 11100 m3 for liquid 220 m3 for solid_HL |
|-----------|--|

Types of Storage Units

| Storage Unit Name | Type Name | Year Opened | Closed? | Full? | Modular? | Contains SRS? |
|-------------------|--------------|-------------|---------|-------|----------|---------------|
| SOLID_LL | building | 1982 | No | No | No | No |
| LIQUID | tank (other) | 1982 | No | No | No | No |
| SOLID_HL | well | 1982 | No | No | No | No |

Site (Data) : Paks

Stock of waste as at December 2008

Country: HUNGARY

Reporting Year: 2008

Site Name: Paks

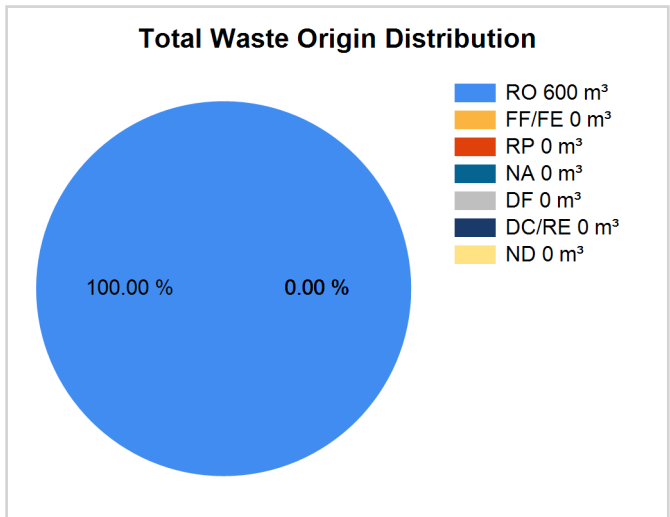
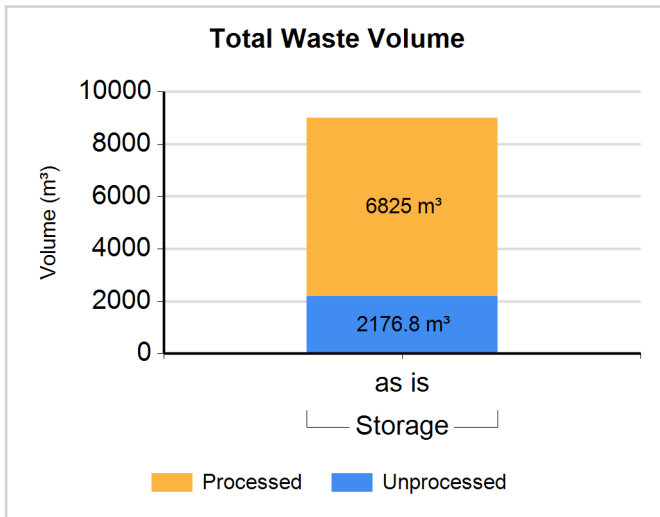
Full Name: Paks Nuclear Power Plant

Inventory Reporting Date: December 2008

Waste Matrix Used: PNPP

Waste Inventory

Est=distribution is an estimate, Proc.=Is the waste processed (Yes/No)? RO=Reactor Operations, FF/FE=Fuel Fabrication/Fuel Enrichment, RP=Reprocessing, NA=Nuclear Applications,DF=Defence, DC/RE=Decommissioning/Remediation, ND=Not Determined



Note: where volume "as dispo" is provided, volume "as is" is used in the graph instead.

Site (Data) : Paks

Stock of waste as at December 2008

Country: HUNGARY

Reporting Year: 2008

Waste Class: Solid_LL

| Waste Class Name | Location / Facility | Proc | Est. | Volume "as is" (m ³) | Volume "as dispo" (m ³) | RO % | FF/FE % | RP % | NA % | DF % | DC/RE % | ND % |
|------------------|---------------------|------|------|----------------------------------|-------------------------------------|--------|---------|------|------|------|---------|------|
| Solid_LL | Storage | N | N | 603.000 | 603.000 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Solid_LL | Storage | Y | N | 1224.000 | 1224.000 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Comment # 6598: The additional characteristics of the waste

Unprocessed: flammable, liquid (aqueous), resin, sludge, solid (non-dispersible)

Processed: flammable, liquid (aqueous), resin, sludge, solid (non-dispersible)

Waste Class: Solid_HL

| Waste Class Name | Location / Facility | Proc | Est. | Volume "as is" (m ³) | Volume "as dispo" (m ³) | RO % | FF/FE % | RP % | NA % | DF % | DC/RE % | ND % |
|------------------|---------------------|------|------|----------------------------------|-------------------------------------|--------|---------|------|------|------|---------|------|
| Solid_HL | Storage | N | N | 88.800 | 88.800 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Comment # 6599: The additional characteristics of the waste

Unprocessed: flammable, liquid (aqueous), resin, sludge, solid (non-dispersible)

Processed: flammable, liquid (aqueous), resin, sludge, solid (non-dispersible)

Waste Class: Liquid_EC

| Waste Class Name | Location / Facility | Proc | Est. | Volume "as is" (m ³) | Volume "as dispo" (m ³) | RO % | FF/FE % | RP % | NA % | DF % | DC/RE % | ND % |
|------------------|---------------------|------|------|----------------------------------|-------------------------------------|--------|---------|------|------|------|---------|------|
| Liquid_EC | Storage | Y | N | 5601.000 | 5601.000 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Comment # 6600: The additional characteristics of the waste

Unprocessed: flammable, liquid (aqueous), resin, sludge, solid (non-dispersible)

Processed: flammable, liquid (aqueous), resin, sludge, solid (non-dispersible)

Waste Class: Liquid_RE

| Waste Class Name | Location / Facility | Proc | Est. | Volume "as is" (m ³) | Volume "as dispo" (m ³) | RO % | FF/FE % | RP % | NA % | DF % | DC/RE % | ND % |
|------------------|---------------------|------|------|----------------------------------|-------------------------------------|--------|---------|------|------|------|---------|------|
| Liquid_RE | Storage | N | N | 149.500 | 149.500 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Waste Class: Liquid_O

| Waste Class Name | Location / Facility | Proc | Est. | Volume "as is" (m ³) | Volume "as dispo" (m ³) | RO % | FF/FE % | RP % | NA % | DF % | DC/RE % | ND % |
|------------------|---------------------|------|------|----------------------------------|-------------------------------------|--------|---------|------|------|------|---------|------|
| Liquid_O | Storage | N | N | 1335.500 | 1335.500 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Processing - Treatment method(s)

| Method | Status | | | |
|----------------------|---------|-------------|---|---------------|
| | Planned | R&D program | Current practice method use over the last 5 years | Past Practice |
| Compaction | N | N | Same | N |
| Decontamination | N | N | Same | N |
| Evaporation | N | N | Same | N |
| Ion Exchange | N | N | Same | N |
| Wastewater Treatment | N | Y | | N |

Site (Structure) : B́ataaṕati

Country: HUNGARY

Reporting Year: 2008

Full Name: National Radioactive Waste Repository

Location: B́ataaṕati

Description:

Official Website:

License Holder(s):

Waste management facilities that are located at this site:

| | | | |
|--|--|---------------------|-----------------|
| Facility: | DISPOSAL | | |
| Description: | solid (or solidified) LILW-SL and LILW-LL waste disposal with NPP origin | | |
| Disposal part of facility | | | |
| The following shows disposal status for waste classes and SRS. | | | |
| Waste Class | Actual | Planned | |
| LILW-SL | No | No | |
| LILW-LL | No | No | |
| HLW | No | No | |
| List SRS? | #Error | | |
| List UMMT? | #Error | | |
| Type: | | | |
| Facility is modular? | #Error | | |
| Depth (m): | | Host medium: | |
| Phase Name | Start Year | End Year | Estimate |

Site (Structure) : Püspökszil

Country: HUNGARY

Reporting Year: 2008

Full Name: Radioactive Waste Treatment and Disposal Facility

Location: Püspökszilágy

Description:

Official Website:

License Holder(s): Public Agency for Radioactive Waste Management

Comment # 339: Percentage of Capacity Used

The percentage of disposal facility capacity used takes in to consideration the volume of waste plus losses due to voids, buffer and backfill materials

Waste management facilities that are located at this site:

| | |
|--------------|---|
| Facility: | SSRS |
| Description: | SRS steel lined disposal wells (see comment 7620) |

Site (Structure) : Püspökszil

Country: HUNGARY

Reporting Year: 2008

Disposal part of facility**SSRS**

The following shows disposal status for waste classes and SRS.

| Waste Class | Actual | Planned |
|-------------|--------|---------|
| LILW-SL | Yes | Yes |
| LILW-LL | Yes | No |
| HLW | No | No |

| | |
|------------|-----|
| List SRS? | Yes |
| List UMMT? | No |

| | | | |
|-------------------------|--------------------|------------------------|---|
| Type: | engineered surface | | |
| Facility is modular? | No | | |
| Capacity existing (m3): | 2 | Capacity planned (m3): | 2 |

| | | | |
|------------|---|--------------|---------------------|
| Depth (m): | 6 | Host medium: | sedimentary (other) |
|------------|---|--------------|---------------------|

| Phase Name | Start Year | End Year | Estimate |
|----------------|------------|----------|----------|
| site selection | 1974 | 1974 | False |
| design | 1974 | 1974 | False |
| construction | 1974 | 1976 | False |
| commissioning | 1976 | 1977 | False |
| operation | 1977 | | False |

Comment **# 7620: facility capacity**

The capacity (existing and planned) is 1.6 m3. The repository consists of an array of boreholes lined with stainless steel with an approximate diameter of 10-20 cm and 6 m deep.

The NEWMDB has a limitation that only integer values can be entered for capacity, therefore the value shown for the facility was rounded by the database to 2 m3

Site (Structure) : Püspökszil

Country: HUNGARY

Reporting Year: 2008

| | |
|------------------|--|
| Facility: | STORAGE |
| Description: | storage for long lived radioactive waste |

Storage part of facility STORAGE

The following shows storage status for waste classes and SRS.

| Waste Class | Actual | Planned |
|-------------|--------|---------|
| LILW-SL | No | No |
| LILW-LL | Yes | Yes |
| HLW | No | No |

| | |
|------------|----|
| List SRS? | No |
| List UMMT? | No |

| | |
|-----------|---|
| Capacity: | 200 m3 for solid waste 2.75 m3 for SRS |
|-----------|---|

Types of Storage Units

| Storage Unit Name | Type Name | Year Opened | Closed? | Full? | Modular? | Contains SRS? |
|-------------------|-----------|-------------|---------|-------|----------|---------------|
| Store | building | 2005 | No | No | No | No |
| Well | well | 2005 | No | No | No | No |

Processing part of facility STORAGE

The following shows processing status for waste classes and SRS.

| Waste Class | Actual | Planned |
|-------------|--------|---------|
| LILW-SL | No | No |
| LILW-LL | Yes | Yes |
| HLW | No | No |

| | |
|--------------|-----------|
| Type: | Treatment |
| Year opened: | 2006 |

Site (Structure) : Püspökszil

Country: HUNGARY

Reporting Year: 2008

| | |
|------------------|--------------------------|
| Facility: | VAULTS |
| Description: | concrete disposal vaults |

Disposal part of facility VAULTS

The following shows disposal status for waste classes and SRS.

| Waste Class | Actual | Planned |
|-------------|--------|---------|
| LILW-SL | Yes | Yes |
| LILW-LL | Yes | No |
| HLW | No | No |

| | |
|------------|----|
| List SRS? | No |
| List UMMT? | No |

| | | | |
|-------------------------|--------------------|------------------------|------|
| Type: | engineered surface | | |
| Facility is modular? | No | | |
| Capacity existing (m3): | 5040 | Capacity planned (m3): | 5040 |

| | | | |
|------------|---|--------------|---------------------|
| Depth (m): | 6 | Host medium: | sedimentary (other) |
|------------|---|--------------|---------------------|

| Phase Name | Start Year | End Year | Estimate |
|---------------------|------------|----------|----------|
| site selection | 1974 | 1974 | False |
| design | 1974 | 1974 | False |
| construction | 1974 | 1976 | False |
| commissioning | 1976 | 1977 | False |
| operation | 1977 | | False |
| ACTIVITY: upgrading | 2001 | | False |

Site (Structure) : Püspökszil

Country: HUNGARY

Reporting Year: 2008

Processing part of facility **VAULTS**

The following shows processing status for waste classes and SRS.

| Waste Class | Actual | Planned |
|-------------|--------|---------|
| LILW-SL | Yes | Yes |
| LILW-LL | Yes | Yes |
| HLW | No | No |

| | |
|--------------|-------------------------|
| Type: | Treatment, Conditioning |
| Year opened: | 1977 |

Site (Data) : Püspökszil

Stock of waste as at December 2008

Country: HUNGARY

Reporting Year: 2008

Site Name: Püspökszil

Full Name: Radioactive Waste Treatment and Disposal Facility

Inventory Reporting Date: December 2008

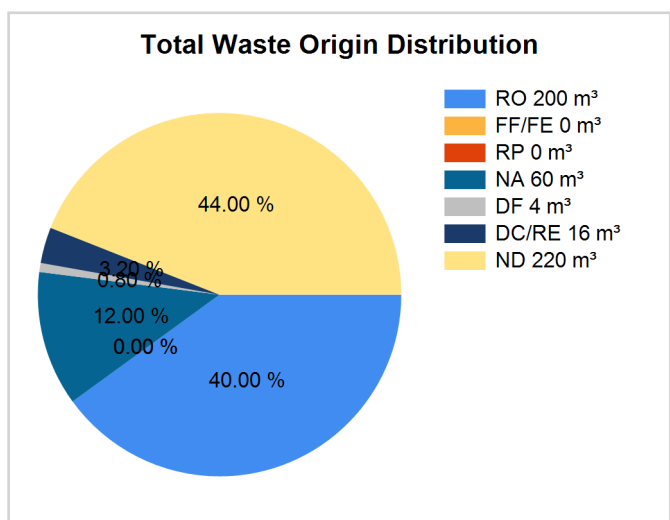
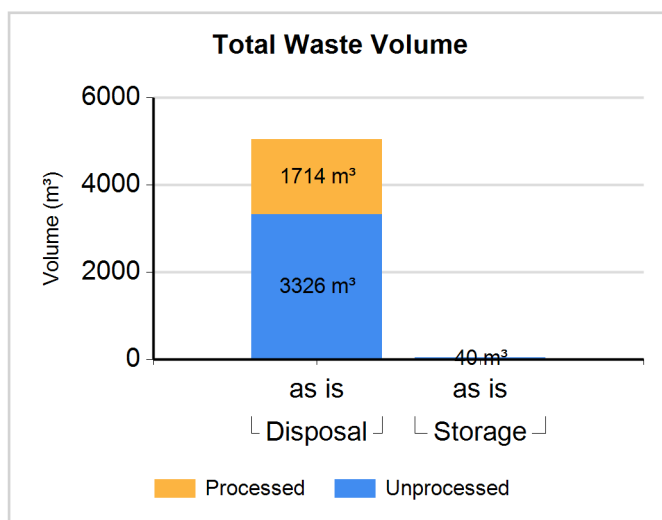
Waste Matrix Used: PURAM

Comment # 339: Percentage of Capacity Used

The percentage of disposal facility capacity used takes in to consideration the volume of waste plus losses due to voids, buffer and backfill materials

Waste Inventory

Est=distribution is an estimate, Proc.=Is the waste processed (Yes/No)? RO=Reactor Operations, FF/FE=Fuel Fabrication/Fuel Enrichment, RP=Reprocessing, NA=Nuclear Applications,DF=Defence, DC/RE=Decommissioning/Remediation, ND=Not Determined



Note: where volume "as dispo" is provided, volume "as is" is used in the graph instead.

Waste Class: LILW-SL

| Waste Class Name | Location / Facility | Proc | Est. | Volume "as is" (m³) | Volume "as dispo" (m³) | RO % | FF/FE % | RP % | NA % | DF % | DC/RE % | ND % |
|------------------|---------------------|------|------|---------------------|------------------------|-------|---------|------|-------|------|---------|-------|
| LILW-SL | Disposal | N | N | 1330.000 | 1330.000 | 20.00 | 0.00 | 0.00 | 20.00 | 2.00 | 8.00 | 50.00 |
| LILW-SL | Disposal | Y | N | 685.000 | 685.000 | 80.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 20.00 |

Waste Class: LILW-LL

| Waste Class Name | Location / Facility | Proc | Est. | Volume "as is" (m³) | Volume "as dispo" (m³) | RO % | FF/FE % | RP % | NA % | DF % | DC/RE % | ND % |
|------------------|---------------------|------|------|---------------------|------------------------|-------|---------|------|-------|------|---------|-------|
| LILW-LL | Storage | N | N | 40.000 | 40.000 | 0.00 | 0.00 | 0.00 | 20.00 | 0.00 | 0.00 | 80.00 |
| LILW-LL | Disposal | N | N | 1996.000 | 1996.000 | 20.00 | 0.00 | 0.00 | 20.00 | 2.00 | 8.00 | 50.00 |
| LILW-LL | Disposal | Y | N | 1029.000 | 1029.000 | 80.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 20.00 |

Processing - Treatment method(s)

| Method | Status | | | |
|------------|---------|-------------|---|---------------|
| | Planned | R&D program | Current practice method use over the last 5 years | Past Practice |
| Compaction | N | N | Same | N |

Site (Data) : Püspökszil

Stock of waste as at December 2008

Country: HUNGARY

Reporting Year: 2008

Processing - Conditioning method(s)

| Method | Status | | | |
|----------------|---------|-------------|---|---------------|
| | Planned | R&D program | Current practice method use over the last 5 years | Past Practice |
| Bituminization | N | N | | Y |
| Cementation | N | N | Increase | N |
| Encapsulation | N | N | Same | N |

Spent Sources <=30 years in Disposition

| Nuclide | Number of Sources/Total Activity of Sources (GBq) | | | c o n d | u n c o n d | c a t | Total Activity for all Groups (GBq) | Decay Date |
|---------|---|--|-----------------------------|------------------|----------------------------|-------------|-------------------------------------|------------|
| | Group I less than or equal 4GBq | Group II more than 4GBq but less than or equal 4E+4GBq | Group III more than 4E+4GBq | | | | | |
| | num/activity | num/activity | num/activity | | | | | |
| Co-60 | 7069 | 447 | | Y | Y | N | 3.904E+005 | |
| | 4.000E+002 | 3.900E+005 | | | | | | |
| Cs-137 | 2491 | 273 | | N | Y | N | 1.500E+004 | |
| | 1.000E+003 | 1.400E+004 | | | | | | |
| H-3 | 1637 | 646 | | Y | Y | N | 9.964E+004 | |
| | 6.400E+002 | 9.900E+004 | | | | | | |
| Ir-192 | 4756 | 71 | | Y | N | N | 1.597E+003 | |
| | 9.700E+001 | 1.500E+003 | | | | | | |
| Kr-85 | 7198 | 1 | | Y | Y | N | 1.152E+002 | |
| | 1.100E+002 | 5.200E+000 | | | | | | |
| Pm-147 | 714 | | | N | Y | N | 1.500E+001 | |
| | 1.500E+001 | | | | | | | |
| Po-210 | 531 | | | N | Y | N | 1.300E-008 | |
| | 1.300E-008 | | | | | | | |
| Sr-90 | 1307 | 64 | | Y | N | N | 2.823E+004 | |
| | 2.300E+002 | 2.800E+004 | | | | | | |

Site (Data) : Püspökszil

Stock of waste as at December 2008

Country: HUNGARY

Reporting Year: 2008

Spent Sources > 30 years in Disposition

| Nuclide | Number of Sources/Total Activity of Sources (GBq) | | c o n d | u n c o n d | c a t | Total Activity for all Groups (GBq) | Decay Date |
|---------|---|----------------------------|------------------|----------------------------|-------------|--|------------|
| | Group I less than or equal 2 GBq | Group II more than 2GBq | | | | | |
| | num/activity | num/activity | | | | | |
| Am-241 | 8143 | 64 | N | Y | N | 1.920E+003 | |
| | 2.200E+002 | 1.700E+003 | | | | | |
| Am-241 | 64 | 66 | N | Y | N | 1.212E+004 | |
| | 1.200E+002 | 1.200E+004 | | | | | |
| C-14 | 152 | | Y | N | N | 1.000E+001 | |
| | 1.000E+001 | | | | | | |
| Pu-238 | 74 | 1 | N | Y | N | 1.150E+002 | |
| | 2.500E+001 | 9.000E+001 | | | | | |
| Pu-238 | 3 | 3 | N | Y | N | 8.310E+002 | |
| | 1.000E+000 | 8.300E+002 | | | | | |
| Pu-239 | 522 | 1 | N | Y | N | 1.070E+001 | |
| | 1.000E+000 | 9.700E+000 | | | | | |
| Ra-226 | 1685 | 2 | Y | N | N | 9.800E+001 | |
| | 7.500E+001 | 2.300E+001 | | | | | |
| Ra-226 | 31 | 12 | N | Y | N | 1.580E+002 | |
| | 3.800E+001 | 1.200E+002 | | | | | |
| Tc-99 | 3091 | | N | Y | N | 1.900E+002 | |
| | 1.900E+002 | | | | | | |

Regulators

Country: HUNGARY

Reporting Year: 2008

| | |
|---------------|--|
| Name: | NPHMOS |
| Full Name: | National Public Health and Medical Officer Service |
| Divison: | |
| City or Town: | regional centres |
| Main Website: | |

| | |
|---------------|-----------------------------------|
| Name: | HAEA |
| Full Name: | Hungarian Atomic Energy Authority |
| Divison: | |
| City or Town: | Budapest |
| Main Website: | |

Regulations / Laws

Country: HUNGARY

Reporting Year: 2008

| | | |
|---------------------------------|--|-----|
| Name: | Atomic Law | |
| Title or Name: | Act No. CXVI. of 1996 on Atomic Energy | |
| Reference Number: | 116/1996 tv. | |
| Date Promulgated or Proclaimed: | 12/18/1996 | Law |

| | | |
|---------------------------------|--|------------|
| Name: | PURAM | |
| Title or Name: | Governmental Decree No. 240/1997. (XII. 18.) Korm., on the establishment of the organisation designated for implementing disposing of radioactive waste disposal and spent fuel, as well as decommissioning of nuclear installations, and on the financial source of performing its tasksactivities. | |
| Reference Number: | 240/1997 korm. | |
| Date Promulgated or Proclaimed: | 12/18/1997 | Regulation |

| | | |
|---------------------------------|---|------------|
| Name: | Exemption | |
| Title or Name: | Governmental Decree No. 124/1997. (VII. 18.) Korm., on radioactive materials as well as equipment generating ionising radiation, exempted from the scope of the Atomic Energy Act No. CXVI of 1996. | |
| Reference Number: | 124/1997 korm. | |
| Date Promulgated or Proclaimed: | 7/18/1997 | Regulation |

| | | |
|---------------------------------|---|------------|
| Name: | ActLevels | |
| Title or Name: | Order of the Minister of Public Welfare No. 23/1997. (VII. 18.) NM defining the exemption levels (activity concentrations and activities cf. ICRP-60) of radionuclides. | |
| Reference Number: | 23/1997 NM | |
| Date Promulgated or Proclaimed: | 7/18/1997 | Regulation |

| | | |
|---------------------------------|--|------------|
| Name: | RadProt | |
| Title or Name: | Order of the Minister of Health No. 16/2000. (VI. 8.) EüM on the execution of certain provisions of the Act No. CXVI. of 1996 on Atomic Energy associated with radiation protection. | |
| Reference Number: | 16/2000 EüM | |
| Date Promulgated or Proclaimed: | 6/8/2000 | Regulation |

Regulations / Laws

Country: HUNGARY

Reporting Year: 2008

| | | | |
|---------------------------------|--|------------|--|
| Name: | SiteSelect | | |
| Title or Name: | Order of the Minister of Industry, Trade and Tourism No. 62/1997(XI.26.) IKIM on the Geological and Mining Requirements for the Siting and Planning of Nuclear Facilities and Radioactive Waste Disposal Facilities. | | |
| Reference Number: | 62/1997 IKIM | | |
| Date Promulgated or Proclaimed: | 11/26/1997 | Regulation | |

| | | | |
|---------------------------------|--|------------|--|
| Name: | NuclFund | | |
| Title or Name: | Order of the Minister of Justice No. 14/2005 (VII.25.) IM on the operation and administration of the Central Nuclear Financial Fund. | | |
| Reference Number: | 14/2005 IM | | |
| Date Promulgated or Proclaimed: | 7/25/2005 | Regulation | |

| | | | |
|---------------------------------|--|------------|--|
| Name: | HAEA | | |
| Title or Name: | Government Decree 114/2003 (VII.29.) on the Scope of Duty, Authority and Jurisdiction of Imposing Penalty of the Hungarian Atomic Energy Authority, and on the Activities of the Atomic Energy Council | | |
| Reference Number: | 114/2003 Korm. | | |
| Date Promulgated or Proclaimed: | 7/29/2003 | Regulation | |

| | | | |
|---------------------------------|--|------------|--|
| Name: | St&Disp | | |
| Title or Name: | Decree of the Minister of Health, Social and Family Affairs 47/2003 (VIII.8.) on some aspects of the interim storage and final disposal of radioactive waste and on the radiological aspects of radioactive materials arising from industrial activities and naturally occurring radioactive materials | | |
| Reference Number: | 47/2003 ESzCsM | | |
| Date Promulgated or Proclaimed: | 8/8/2003 | Regulation | |

Milestones

Country: HUNGARY

Reporting Year: 2008

| | | | |
|---|------|-----------|--|
| Start Year or Reference Year: | 2008 | End Year: | |
| Description of Milestone: | | | |
| On the basis of the pre-construction safety assessment the authority issued the construction licence of the Bataapati LILW repository in May 2008. The operation licence for the surface part entered into force in October 2008 allowing for the temporary storage in the technology building. The name of the new facility in Bataapati is National Radioactive Waste Repository. | | | |
| Start Year or Reference Year: | 2007 | End Year: | |
| Description of Milestone: | | | |
| The competent authority issued the Environmental License for the Bataapati LILW repository which entered into legal force on 17 October 2007. | | | |
| Start Year or Reference Year: | 2007 | End Year: | |
| Description of Milestone: | | | |
| Construction licensing of the Bataapati LILW repository started on 8 November 2007 when the necessary documentation based on safety assessment (Pre- construction Safety Assessment) was handed to the competent authority. | | | |
| Start Year or Reference Year: | 2007 | End Year: | |
| Description of Milestone: | | | |
| The authority issued the operation license for the new modules (No. 12-16) of the Spent Fuel Interim Storage in 2007. | | | |
| Start Year or Reference Year: | 2006 | End Year: | |
| Description of Milestone: | | | |
| In parallel with on-going underground geological investigations in Bataapati the following additional activities started in 2006. a) Preliminary activities (landscaping, planning etc.) for aboveground infrastructures of the future LILW repository. b) Preparation of licensing documentations of the future LILW repository. | | | |
| Start Year or Reference Year: | 2006 | End Year: | |
| Description of Milestone: | | | |
| The first part of the environmental licensing procedure was accomplished in January 2006 when the regionally competent authority accepted the Preliminary Environmental Impact Study giving green light to the second part of the procedure: the compilation of the Environmental Impact Assessment. | | | |
| Start Year or Reference Year: | 2006 | End Year: | |
| Description of Milestone: | | | |
| In 2006 the Governmental Decree 257/2006. (XII.15.) declared that the Bataapati LILW repository project is an issue of preferential importance and as such it enjoys certain priorities in licensing and legal procedures. | | | |

Milestones

Country: HUNGARY

Reporting Year: 2008

| | | | |
|--|------|-----------|------|
| Start Year or Reference Year: | 2006 | End Year: | |
| Description of Milestone: | | | |
| In 2006 new activities began in the framework of the second phase of the safety enhancement program (approved in December 2005) in the Radioactive Waste Treatment and Disposal Facility at Püspökszilágy. Plans were prepared and approved for opening 4 vaults (each of 470m ³ containing mainly historical waste) and for retrieving, selection, reconditioning and repackaging waste. | | | |
| Start Year or Reference Year: | 2006 | End Year: | |
| Description of Milestone: | | | |
| The modules 12-16 of the Spent Fuel Interim Storage Facility (II. phase of the enlargement of the SFISF) became practically accomplished in 2006. The final installation and the start of operation are the tasks of the year 2007. | | | |
| Start Year or Reference Year: | 2005 | End Year: | |
| Description of Milestone: | | | |
| After the strongly supportive result of a local referendum held in the village of Bátaapáti, the Hungarian Parliament expressed its approval in principal for the construction of the repository | | | |
| Start Year or Reference Year: | 2004 | End Year: | 2006 |
| Description of Milestone: | | | |
| LILW: The programme of further investigations of Bátaapáti (Üveghuta) site (construction of two paralel inclined shafts in order to determine the exact location of the repository and its safety zone) was approved by the competent minister in December 2004. | | | |
| Start Year or Reference Year: | 2003 | End Year: | |
| Description of Milestone: | | | |
| HLW: start of investigations to select a site of an underground laboratory in the Mecsek Mountains for the exploration of the Boda Claystone Formation. | | | |
| Start Year or Reference Year: | 2002 | End Year: | 2005 |
| Description of Milestone: | | | |
| LILW: Safety upgrading program (Phase I) for the Radioactive Waste Treatment and Disposal Facility in Püspökszilágy (based on previous safety assessments). | | | |
| Start Year or Reference Year: | 2001 | End Year: | 2003 |
| Description of Milestone: | | | |
| LILW: Detailed geological and hydrogeological survey from the surface as well as safety assessment of Bátaapáti (Üveghuta) site. The geological authority stated that the site fulfils all the requirements formulated in the relevant decree: thus, from the geological point of view it is suitable for the disposal of LILW. | | | |

Milestones

Country: HUNGARY

Reporting Year: 2008

| | | | |
|--|------|-----------|------|
| Start Year or Reference Year: | 2000 | End Year: | |
| Description of Milestone: | | | |
| LILW: Collection of existing data and preparation of a preliminary safety assessment to establish further investigation in B́ataaṕati (Üveghuta). | | | |
| Start Year or Reference Year: | 2000 | End Year: | 2001 |
| Description of Milestone: | | | |
| HLW: Elaboration of a national policy for HLW management, aiming at the establishment of a national strategy. | | | |
| Start Year or Reference Year: | 1999 | End Year: | |
| Description of Milestone: | | | |
| LILW: IAEA WATRP Mission confirms the results of the investigation and recommends further exploration of B́ataaṕati (Üveghuta). | | | |
| Start Year or Reference Year: | 1998 | End Year: | 1999 |
| Description of Milestone: | | | |
| HLW: Country-wide screening for a potential site. | | | |
| Start Year or Reference Year: | 1997 | End Year: | 1998 |
| Description of Milestone: | | | |
| LILW: Exploration of the suitability of the potential site B́ataaṕati (Üveghuta). | | | |
| Start Year or Reference Year: | 1996 | End Year: | |
| Description of Milestone: | | | |
| LILW: Decision to investigate the B́ataaṕati (Üveghuta) site for a subsurface repository in granite, while keeping the Udvari site for a surface repository stand-by. | | | |
| Start Year or Reference Year: | 1993 | End Year: | 1996 |
| Description of Milestone: | | | |
| LILW: A National Program was launched to select a site for a repository for NPP waste (countrywide screening and regional screening for potential sites). | | | |

Milestones

Country: HUNGARY

Reporting Year: 2008

| | | | |
|---|------|-----------|------|
| Start Year or Reference Year: | 1993 | End Year: | 1999 |
| Description of Milestone: | | | |
| HLW: Geological exploration 1100 m below surface in an underground research object in the Boda claystone formation. | | | |
| Start Year or Reference Year: | 1989 | End Year: | 1993 |
| Description of Milestone: | | | |
| HLW: Preliminary geological investigation of the Boda claystone formation. | | | |
| Start Year or Reference Year: | 1986 | End Year: | 1988 |
| Description of Milestone: | | | |
| LILW: A disposal site for NPP waste was investigated in Ófalu, but the licence for construction was not granted by the Hungarian authorities. | | | |
| Start Year or Reference Year: | 1976 | End Year: | 1976 |
| Description of Milestone: | | | |
| LILW: Licencing of the Radioactive Waste Treatment and Disposal Facility in Püspökszilágy for institutional waste. | | | |
| Start Year or Reference Year: | 1960 | End Year: | 1960 |
| Description of Milestone: | | | |
| LILW: Start of operation of an interim storage in Solymár. | | | |

Policies

Country: HUNGARY

Reporting Year: 2008

National Systems

| Policy | | (Yes;Partially;No) |
|-------------------------|---|------------------------------|
| Q14 | Has your Country implemented a national policy for radioactive waste management? | Yes |
| Strategies | | (Yes;Partially;No) |
| Q15 | Has your country developed strategies to implement a national policy? | Yes |
| Requirements | | (Yes;Partially;No) |
| Q17 | identified the parties involved in the different steps of radioactive waste management | Yes |
| Q18 | specified a rational set of safety, radiological and environmental protection objectives | Yes |
| Q19 | implemented a mechanism to identify existing and anticipated radioactive wastes | Yes |
| Q20 | implemented controls over radioactive waste generation | Yes |
| Q21 | identified available methods and facilities to process, store and dispose of radioactive waste on an appropriate time-scale | Yes |
| Q22 | taken into account interdependencies among all steps in radioactive waste generation and management | Yes |
| Q23 | implemented appropriate research and development to support the operational and regulatory needs | Yes |
| Q24 | implemented a funding structure and the allocation of resources that are essential for radioactive waste management | Yes |
| Q25 | implemented formal mechanisms for disseminating information to the public and for public consultation | Yes |
| Responsibilities | | (Complete;Incomplete) |
| Q28 | establish and implement a legal framework for the management of radioactive waste | Complete |
| Q29 | establish or designate a regulatory body that has the responsibility for carrying out the regulatory function with regard to safety and the protection of human health and the environment. | Complete |
| Q30 | define the responsibilities of waste generators and operators of waste management facilities | Complete |
| Q31 | provide for adequate resources | Complete |
| Q33 | enforce compliance with regulatory requirements | Complete |
| Q34 | implement the licensing process | Complete |
| Q35 | advise the government | Complete |
| Q37 | identify an acceptable destination for the radioactive waste | Complete |
| Q114 | comply with legal requirements | Complete |

Policies

Country: HUNGARY

Reporting Year: 2008

| Activities | | (Yes;Partially;No) |
|-------------------|---|---------------------------|
| Q43 | perform safety and environmental impact assessments for radioactive waste management facilities | Yes |
| Q44 | ensure adequate radiation protection for workers, the general public and the environment | Yes |
| Q45 | ensure suitable staff, equipment, facilities, training and operating procedures are available to perform the safe radioactive waste management steps | Yes |
| Q46 | establish and implement a quality assurance programme for the radioactive waste generated or its processing, storage and disposal | Yes |
| Q47 | establish and keep records of appropriate information regarding the generation, processing, storage and disposal of radioactive waste, including an inventory of radioactive waste | Yes |
| Q48 | provide surveillance and control of activities involving radioactive waste as required by the regulatory body | Yes |
| Q49 | collect, analyze and, as appropriate, share operational experience to ensure continued safety improvements in radioactive waste management | Yes |
| Q50 | conduct or otherwise ensure appropriate research and development to support operational needs in radioactive waste management | Yes |
| Clearance | | (Yes;No) |
| Q128 | Does your country have "clearly defined clearance levels based on radiological criteria, with policy statements that material below those levels can be recycled or disposed of with non-radioactive wastes"? | Yes |
| Q129 | Has your country ever used a "case-by-case" approach to clearing radioactive wastes (excluding spent/disused sealed radioactive sources)? | Yes |
| Q130 | Has your country ever used clearance levels to dispose of, reuse or recycle radioactive waste as non-radioactive waste or as a non-radioactive resource (excluding spent/disused sealed radioactive sources)? | Yes |

Policies

Country: HUNGARY

Reporting Year: 2008

Disposal Facilities

| Licensing | | (Yes - All;Yes - Some;No) |
|--------------|--|---------------------------|
| Q53 | Environmental Assessment (EA) | Yes - All |
| Q54 | Environmental Impact Statement (EIS) | Yes - All |
| Q55 | Performance Assessment (PA) | No |
| Q56 | Quality Assurance (QA) | No |
| Q57 | Safety Assessment (SA) | Yes - All |
| Operation | | (Yes - All;Yes - Some;No) |
| Q60 | Does your Country have formal, documented waste acceptance criteria for its operating or proposed disposal facilities? | Yes - All |
| Post-Closure | | (Yes;No) |
| Q61 | Does your Country have any written policies to address the maintenance of records that describe the design, location and inventory of waste disposal facilities? | No |
| Q63 | Does your Country have any written policies to address active institutional controls or passive institutional controls, such as monitoring or access restrictions? | Yes |
| Q65 | access restrictions | Yes |
| Q66 | drainage and/or leachate collection system(s) | No |
| Q67 | leachate treatment systems | No |
| Q68 | environmental monitoring | Yes |
| Q69 | facility monitoring | Yes |
| Q70 | surveillance | Yes |
| Q71 | plans for intervention measures during active institutional control if there is an unplanned release of radioactive materials from the disposal facility | No |

Policies

Country: HUNGARY

Reporting Year: 2008

Processing/Storage

| Policies/Procedures | | (Yes;No) |
|----------------------------|--|-----------------|
| Q73 | waste sorting/segregation | Yes |
| Q74 | waste minimization | Yes |
| Q75 | waste storage | Yes |
| Q76 | processing and/or storing and/or disposing of nuclear fuel cycle waste separately from non-nuclear fuel cycle waste (also known as nuclear applications waste) | No |
| Q78 | Does your country have any legislation, regulation, or policy that waste processing must take place prior to storage (see following note) | Yes |
| Implementation | | (Yes;No) |
| Q80 | In your Country are there any waste processing facilities at the same location where the waste is generated? | Yes |
| Q81 | In your Country are there any centralized waste processing facilities? | No |
| Q82 | In your Country are there any mobile waste processing facilities? | No |
| Foreign | | (Yes;No) |
| Q121 | Has your country sent any wastes or spent fuel to another country for processing (reprocessing for fuel)? | No |
| Q124 | Has your country accepted any wastes or spent fuel from another country for processing (reprocessing for fuel)? | No |

Policies

Country: HUNGARY

Reporting Year: 2008

Spent/Disused SRS

| Registration | | (Yes;No) |
|--------------------|---|----------|
| Q84 | Is there a national level registry? | Yes |
| Q85 | If answer was yes, is the registry used only for disused/spent SRS? | No |
| Q87 | Are there regional-level registries (one or more)? | No |
| Q90 | Are there local-level registries (one or more)? | Yes |
| Q115 | If the answer was yes, are any registries used only for disused/spent SRS? | No |
| Procedures | | (Yes;No) |
| Q91 | Does your Country have documented procedures in place to ensure that sealed radioactive sources (SRS) are transferred to secure facilities in a timely manner after their user declares them to be spent? | Yes |
| Agreements | | (Yes;No) |
| Q93 | Government to Government agreements | No |
| Q94 | Government - Supplier agreements | No |
| Q95 | Supplier-User agreements | Yes |
| Q97 | Do any agreements include suppliers that are outside of your Country? | Yes |
| Release / Disposal | | (Yes;No) |
| Q99 | Does your Country have any regulations to free-release spent sealed radioactive sources (SRS)? | Yes |
| Q100 | Has your Country disposed of spent SRS in existing disposal facilities for LILW or HLW waste? | Yes |
| Q101 | Does your Country plan to dispose of spent SRS in existing or planned disposal facilities for LILW or HLW waste? | Yes |
| Q102 | Has your Country implemented dedicated disposal facilities for spent SRS? | Yes |
| Q103 | Does your Country have plans to implement dedicated disposal facilities for spent SRS? | Yes |
| Import-Export | | |
| Radioactive Waste | | (Yes;No) |
| Q104 | Does your Country have laws or Regulations restricting either the import or export of radioactive waste (excluding spent fuel)? | No |
| Spent Fuel | | (Yes;No) |
| Q105 | Does your Country have laws or Regulations restricting either the import or export of spent fuel? | No |

Policies

Country: HUNGARY

Reporting Year: 2008

Liquid HLW**Storage****(Yes;No)**

Q106 Does your Country have high-level liquid wastes in storage? No

UMMT**Responsibility****(Yes;No)**

Q110 Does your Country have any Uranium Mine and Mill Tailings sites that do not have a designated authority to manage them? No

Decommissioning**Funding****(Yes - All;Yes - Some;No)**

Q111 Does your Country require that funds should be set aside in support of future waste management activities, such as decommissioning activities? Yes - All

Facilities**(Yes;No)**

Q119 Does Your Country have any nuclear fuel cycle facilities? Yes

Q120 Does Your Country have any nuclear applications facilities (non fuel cycle facilities)? Yes

Timeframe**(Yes - All;Yes - Some;No)**

Q112 Does your Country require a time frame for the decommissioning of nuclear fuel cycle facilities once these facilities cease operation? Yes - Some

Q113 Does your Country require a time frame for the decommissioning of non-nuclear fuel cycle facilities once these facilities cease operation? No

Future Outlook

Country: HUNGARY

Reporting Year: 2008

Data not available.

Future Outlook

Country: HUNGARY

Reporting Year: 2008

Data not available.

Future Outlook

Country: HUNGARY

Reporting Year: 2008

Data not available.

Future Outlook

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