EDITORIAL NOTE

ANNEX 1.
SUMMARY OF WASTE CLASSIFICATION SYSTEMS

TABLE A1–1. SUMMARY OF WASTE CLASSIFICATION SYSTEMS

COUNTRY [REFERENCE]	CLASSIFICATION SYSTEM
Argentina [A-1]	Uses the IAEA classification system (see below).
Australia [A–2]	Uses the IAEA classification system (see below).
Austria [A–3]	Naturally occurring radioactive materials (NORM) are defined as radioactive waste if the exposure to the general public would exceed 1 mSv/a. Transition radioactive waste -Type of radioactive waste (mainly from medical origin) which will decay within the period of temporary storage and may then be suitable for management outside of the regulatory control system subject to compliance with clearance levels. (Waste in the transition phase, e.g. short lived decay waste from medical applications containing ^{125}I, is put into decay storage prior to free release). Low and intermediate level waste (LILW) — In LILW, the concentration of radionuclides is such that generation of thermal power during its disposal is sufficiently low. These acceptable thermal power values are site specific following safety assessments. LILW is subdivided: (1) Short lived waste (LILW-SL): This category includes radioactive waste with nuclides half-life less than or equal to those of ^{137}Cs and ^{90}Sr (around 30 years) with a restricted alpha long lived radionuclide concentration (limitation of long lived alpha emitting radio nuclides to 4000 Bq/g in individual waste packages and to an overall average of 400 Bq/g in the total waste volume) and (2) Long lived waste (LILW-LL): Long lived radionuclides and alpha emitters whose concentration exceeds the limits for short lived waste. High level waste (HLW) — does not arise in Austria.
Belarus [A–4]	Solid: (1) Very low level: $<10^3$ β, $<10^2$ α, $<10^1$ transuranic (Bq/g); (2) Low level: 10^3 — 10^4 β, 10^2 — 10^3 α, 10^1 — 10^2 transuranic (Bq/g); (3) Intermediate level: 10^4 — 10^7 β, 10^3 — 10^6 α, 10^2 — 10^5 transuranic (Bq/g); (4) High level: $>10^7$ β, $>10^6$ α, $>10^5$ transuranic (Bq/g) Liquid: (1) Low level: $<10^3$ β, $<10^2$ α, $<10^1$ transuranic (Bq/g); (2) Intermediate level: 10^3 — 10^7 β, 10^2 — 10^6 α, 10^1 — 10^5 transuranic (Bq/g); (3) High level: $>10^7$ β, $>10^6$ α, $>10^5$ transuranic (Bq/g).
Belgium [A–5]	Category A — waste is short lived, low level and intermediate level conditioned waste containing limited quantities of long lived radionuclides. It poses a risk to people and the environment for several hundreds of years. It can be considered for surface or near surface disposal. It corresponds to low level waste in the IAEA 2009 classification. The radiological criteria and limits for the category A waste will be defined in the safety report and licensing conditions for the planned disposal facility in Dessel. Category B — waste is low level and intermediate level conditioned waste contaminated with such quantities of long lived radionuclides that it poses a risk to people and the environment for several tens to several hundreds of thousands of years in some cases. Note that sealed sources that must be managed as radioactive waste end up in category B after treatment and conditioning. Its thermal power is potentially significant at the time of its conditioning, but it will emit too little heat after the storage period to be classified as category C waste. It corresponds to intermediate level waste in the IAEA 2009 classification. Category C — waste is high level conditioned waste containing large quantities of long lived radionuclides and which, like category B waste, poses a risk for several tens to several hundreds of thousands of years in some cases. After the period currently considered for its storage (around 60 years of cooling required, in the event of subsequent disposal in poorly

COUNTRY [REFERENCE]	CLASSIFICATION SYSTEM
	indurated clay), its thermal power still causes a significant increase in the temperature of the repository's host rock. It corresponds to high level waste in the IAEA 2009 classification. Category C waste includes vitrified waste from the reprocessing of spent fuel from commercial nuclear power plants (and from the BR2 research reactor) and non-reprocessed spent fuel declared as waste, except for certain fuels from research reactors, which belong to category B. The above waste categories are further subdivided in waste classes and waste streams.
Bosnia and Herzegovina [A-6]	Uses the IAEA classification system (see below).
Botswana [A-7]	Cleared material/waste: Waste containing levels of radio-nuclides at concentrations less than the clearance levels established by the Radiation Protection Inspectorate; Low level (short lived)/Decay waste: Low level radioactive waste containing short lived radio-nuclides only (e.g. with half-lives less than 10 days) that will decay to clearance levels within three years after the time of its generation; Low and intermediate level short lived waste (LILW-SL): Waste which will not decay to clearance levels within 3 years and contains beta/gamma emitting radio-nuclides with half-lives less than 30 years and/or alpha emitting radio-nuclides with an activity less than 400 Bq/g and a total activity less than 4000 Bq in each waste package; Low and intermediate level long lived waste (LILW-LL): Radioactive waste containing radio-nuclides with concentrations above those for LILW-SL, but which does not generate heat at above 2 kW/m³ of waste
Brazil [A–8]	Uses the IAEA classification system (see below).
Bulgaria [A–9]	A classification of radioactive waste based on the separation into categories and subcategories and is aimed at their long term safe management and disposal, in compliance with its activity and specific characteristics Category 1 — waste containing radionuclides with low activity, which do not require the implementation of measures for radiation protection or do not need a high level of isolation and containment; RAW of this category is additionally subdivided into: (1) Category 1a — waste that meets the levels for exemption from regulatory control; (2) Category 1b — very short lived waste containing mainly radionuclides with short half-life (<100 days), whose activity decreases below the levels for exemption from regulatory control as a result of appropriate storage on the site for a limited period of time (<several years); (3) Category 1c — very low level waste with levels of specific activity exceeding a minimal value the levels for exemption from regulatory control and with a very low content of long lived radionuclides, which represent a limited radiological risk. For this category of waste, the application of specific measures for radiation protection or for isolation and containment is not required. Category 2 — low and intermediate level waste: RAW containing radionuclides in concentrations that require measures for reliable isolation and containment, but do not require special measures for heat removal during storage and burial; RAW of this category is additionally subdivided into: (1) Category 2a — low and intermediate level waste containing mainly short lived radionuclides (with a half-life not longer than that of caesium-137) as well as long lived radionuclides at significantly lower levels of activity, limited for the long lived alpha emitters under $4*10^6$ Bq/kg for each individual package and a maximum average value for all packages in the respective facility of $4*10^5$ Bq/kg; for such RAW, reliable isolation and containment is required for a period of up to several hundred years; (2) Category 2b — low and intermediate level waste containing long lived radionuclides at activity levels of long lived alpha emitters, exceeding the limits for category 2a.

COUNTRY [REFERENCE]	CLASSIFICATION SYSTEM
	Category 3 — high level waste: RAW with such a concentration of radionuclides at which heat release must be taken into account during storage and burial; for this category, a higher level of isolation and containment, compared to the low and intermediate level waste, through burial in deep, stable geological formations is needed. This classification is also applied to liquid and gaseous RAW depending on the characteristics and the form of the solid RAW suitable for disposal that is expected to be generated after the conditioning of liquid and gaseous waste. When no technology for conditioning of liquid or gaseous RAW is available in the country, the classification shall be made, taking into account the best modern technologies for conditioning. This classification does not take into account the non-radioactive hazardous constituents of the waste and their potential non-radiological impact.
Canada [A–10]	The radioactive waste classification system is organized according to the degree of containment and isolation required to ensure safety in the short and long terms. The classification system also takes into consideration the hazard potential of different types of radioactive waste. A definitive numerical boundary between the various categories of radioactive waste — primarily between LLW and ILW — cannot be provided because activity limitations differ between individual radionuclides and radionuclide groups and will be dependent on short and long term safety-management considerations. For example, a contact dose rate of two millisieverts per hour (mSv/h) has been used in some cases to distinguish between LLW and ILW. Uranium mine and mill waste — waste rock and mill tailings are a specific type of radioactive waste generated during the mining and milling of uranium ore and the production of uranium concentrate. In addition to tailings, mining activities typically produce large quantities of mineralized and clean waste rock excavated to access the ore body. The tailings and mineralized waste rock contain significant concentrations of long lived radioactive elements, namely thorium-230 and radium-226. Low level radioactive waste (LLW) — contains material with radionuclide content above established clearance levels and exemption quantities and generally limited amounts of long lived activity. LLW requires isolation and containment for up to a few hundred years. LLW generally does not require significant shielding during handling and interim storage. LLW has two subcategories described below: Very short lived low level radioactive waste (VSLLW) — can be stored for decay for up to a few years and subsequently cleared for release. This classification includes radioactive waste containing only short half-life radionuclides of the kind typically used for research and biomedical purposes. Examples of VSLLW are iridium-192 and technetium-99m sources, as well as industrial and medical radioactive waste that contains similar short half-life radionuclides. Generally, the main criterion for VSLLW is the half-life of the predominant radionuclides. In practice, the management of VSLLW should be applied only to radionuclides with a half-life of 100 days or less. Very low level radioactive waste (VLLW) — has a low hazard potential but is nevertheless above the criteria for exemption. Long term waste management facilities for VLLW do not usually need a high degree of containment or isolation. A near surface repository with limited regulatory control is generally suitable. Typically, VLLW includes bulk material such as low activity soil and rubble, decommissioning waste and some uranium-contaminated waste. Intermediate level radioactive waste (ILW) — waste that typically exhibits sufficient levels of penetrating radiation to warrant shielding during handling and interim storage. This type of radioactive waste generally requires little or no provision for heat dissipation during its handling, transportation and long term management. However, some ILW may have heat generation implications in the short term (e.g. refurbishment waste) because of its total radioactivity level.

COUNTRY [REFERENCE]	CLASSIFICATION SYSTEM
	High level radioactive waste (HLW) — is used (irradiated) nuclear fuel that has been declared radioactive waste or waste that generates significant heat (typically more than two kilowatts per cubic metre) via radioactive decay. In Canada, “irradiated nuclear fuel” or “used nuclear fuel” are more accurate terms for spent fuel because discharged fuel is considered a waste material even when it is not fully spent. Despite the name difference, in this report the term “spent fuel” is used to be consistent with the terminology found in the Joint Convention. Spent fuel is associated with penetrating radiation, which requires shielding. Furthermore, spent fuel contains significant quantities of long lived radionuclides, meaning that long term isolation is also required. Waste forms derived from spent fuel (e.g. nuclear fuel reprocessing waste) can exhibit similar characteristics and may be considered HLW. Placement in deep, stable geological formations is considered the preferred option for the long term management of HLW.
Chile [A-11]	Category 1 — Alpha emitting radioisotopes, whatever their activity. Category 2 — Radioisotopes with beta and gamma emitters whose half-life is greater than 100 days. Category 3 — Radioisotopes with beta and gamma emitters whose half-life is less than 100 days.
China [A–12]	Gaseous: (1) Low level waste — Activity concentrations not exceefing $4*10^7$ Bq/m^3 and (2) Intermediate level waste — Activity concentrations higer than $4*10^7$ Bq/m^3. Liquid: (1) Low level waste — Activity concentrations not exceefing $4*10^6$ Bq/l; (2) Intermediate level waste — Activity concentrations higer than $4*10^6$ Bq/l but not exceeding $4*10^{10}$ Bq/l and (3) High level waste — Activity concentrations higer than $4*10^{10}$ Bq/l Solid: (1) Low level waste — Activity concentrations not exceefing $4*10^6$ Bq/kg; (2) Intermediate level waste — half-life longer than 60 days but shorter than or equal to 5 years, with activity concentrations higher than $4*10^6$ Bq/kg or half-life longer than 5 years, but shorter than or equal to 30 years, with activity concentrations higher than $4*10^6$ Bq/kg but not exceeding $4*10^{11}$ Bq/kg and heat release rate less not exceeding to 2 kW/m^3; (3) High level waste — half-life longer than 5 a, but shorter than or equal to 30 years, with heat release rate more than 2 kW/m^3 or activity concentrations higher than $4*10^{11}$ Bq/kg or half-life longer than 30 years, activity concentrations higher than $4*10^{10}$ Bq/kg or heat release rate more than 2 kW/m^3 and (4) Alpha radioactive solide waste — alpha nuclides with half-life longer than 30 years, activity concentrations in a single container higher than $4*10^6$ Bq/kg
Croatia [A–13]	Exempt and cleared radioactive waste — activity concentrations or total radioactive waste activity at or below prescribed exemption or clearance levels Low level short lived radioactive waste — radioactive waste containing radionuclides with half-life less than 100 days which will decay below clearance levels within 3 years Low and intermediate level radioactive waste — radioactive waste containing radionuclides with half-life less than 30 years and activity concentration or total activity which will remain above prescribed exemption or clearance levels 3 years after their creation and having a heat generation rate below 2 kW/m^3 Short lived waste — low and intermediate level radioactive waste containing radionuclides with half-life less than 30 years (limitation of long lived alpha emitting radionuclides to 4 000 Bq/g in individual waste packages and to an overall average of 400 Bq/g in the total waste volume) Long lived waste — low and intermediate level radioactive waste activity concentrations exceeding the limits for short lived waste High level radioactive waste — radioactive waste thermal power above 2 kW/m^3 and activity concentrations exceeding limits for short lived waste.

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Czech Republic [A–14]	Temporary radioactive waste — which after storage for at most 5 years exceeds radioactivity lower than clearance levels. Very low level waste (VLLW) — with radioactivity higher than that of temporary radioactive waste, but which does not require any special measures during disposal. Low level waste (LLW) — with radioactivity higher than that of temporary radioactive waste, but which at the same time contains limited amounts of long lived radionuclides. Intermediate level waste (ILW) — contains a significant amount of long lived radionuclides and therefore it requires a higher degree of isolation from the surrounding environment than the low level waste. High level waste (HLW) — during storage and disposal, it is necessary to take into account heat generated by decay of the contained radionuclides; the waste is processed and treated to meet the acceptance criteria and it must be disposed in deep geological repositories several hundred meters under the ground. Spent fuel — shall not be considered radioactive waste under the Atomic Act unless it has been declared as radioactive waste by its owner or by SÚJB (the nuclear regulator). Spent fuel storage shall be subject to the same requirements as radioactive waste management before disposal and spent fuel shall be stored so that its further treatment is not impeded. NORM — Natural materials produced in the course of mining and treatment of uranium ores are not covered by the Policy. Such natural facilities are gathered in waste dumps and mud pits which are supervised by SÚJB, due to the present radioactive substances to ensure radiation protection of workers and population. Disposal facilities containing solely natural radionuclides are not considered nuclear installations under the Atomic Act.
Cuba [A-15]	Low and intermediate level and very short lived waste — radioactive waste containing radionuclides with a short half-life (less than 100 days) which, after a period of interim storage will decay to clearance levels Low level and intermediate level and short lived waste — Radioactive waste containing radionuclides with activity levels above the clearance levels established by the CNSN, having a half-life higher than 100 days and less than 30 years which does not generate residual heat above 2 kW/m^3 Low and intermediate level and long lived waste — Radioactive waste containing radionuclides with activity levels above the clearance levels established by the CNSN, having half-life higher than 30 years which does not generate residual heat above 2 kW/m^3
Cyprus [A–16]	Uses the IAEA classification system (see below).
Finland [A–17]	The classification system for the purpose of the predisposal management of LILW from nuclear facilities, including NPPs, is based on activity concentrations, Solid and liquid waste arising from the controlled area of an NPP contain almost exclusively short lived beta and gamma emitters and are grouped into the following activity categories: Very low level waste (VLLW) — refers to waste whose average activity concentration of significant radionuclides does not exceed the value of 100 kBq/kg and the total activity does not exceed 1 TBq, α-activity <10 GBq. Low level waste (LLW) — contains so little radioactivity that it can be treated without any special radiation protection arrangements. The activity concentration in the waste must not be more than 1 MBq/kg. Intermediate level waste (ILW) — contains radioactivity to the extent that effective radiation protection arrangements are needed when the waste is processed. As a rule, the activity concentration in the waste is from 1 MBq/kg to 10 GBq/kg.

COUNTRY [REFERENCE]	CLASSIFICATION SYSTEM
	HLW level waste (HLW) — Spent fuel is regarded as HLW. The classification for disposal distinguishes short lived and long lived waste accordingly: Short lived waste — refers to nuclear waste of which the activity concentration after 500 years will be below the level of 100 MBq/kg in each disposed waste package and below an average value of 10 MBq/kg of waste in one emplacement room. Long lived waste — refers to nuclear waste, of which the activity concentration after 500 years will be above the level of 100 MBq/kg in a disposed waste package or above an average value of 10 MBq/kg of waste in one emplacement room.
France [A–18]	Very short lived — waste comes mainly from the medical and non-NPP research sector. Very low level waste (TFA)- has activity level generally lower than 100 Bq/g. It is mostly due to the operation, maintenance and dismantling of NPPs, fuel cycle facilities and research establishments. Low level and intermediate level short lived waste (FMA-VC) — waste results mainly from the operation and dismantling of nuclear power plants, fuel cycle facilities and research establishments. It has activity levels between TFA and FA-VLL/MA-VLL. Low level long lived waste (FA-VL) — waste consists mainly of graphite and radium bearing waste. The activity of graphite waste ranges between 10 000 Bq/g and a few hundreds of thousands of Becquerels per gram. Its long term activity lies essentially with long lived beta emitting radionuclides. Radium bearing waste contains long lived alpha emitting radionuclides and their activity lies between a few tens to a few thousands of Becquerels per gram. Intermediate level, long lived waste (MA-VL) — waste has activity ranging between 1 million and 1 billion Becquerels per gram. There is either no or negligible heat generation. It originates mostly from the reprocessing of spent fuel. High level waste (HA) — waste consists mainly of vitrified waste packages in the form of stainless steel containers, which contain the vast majority of radionuclides from reprocessing of spent fuel, whether in the form of fission products or minor actinides. The activity level of vitrified waste lies in the order of several billions of Becquerels per gram and it generates significant heat. Spent fuel — is not generally considered to be a waste and is normally reprocessed and recycled. However, some limited amounts of spent fuel that are not compatible with the reprocessing facilities may be directly disposed as a waste.
Georgia [A–19]	Uses the IAEA classification system (see below).
Germany [A–20]	The German waste classification system is based on heat generating capacity of the waste: Negligible heat generating radioactive waste are radioactive waste with an average heat output of less than about 200 W/m^3 of waste (corresponding to a 3 degree K increase in temperature at the wall of the disposal chamber of the Konrad repository caused by decay heat from the radionuclides contained in the waste packages). Heat generating radioactive waste are characterized by high activity concentrations and therefore by high decay heat output. This category includes reprocessing residues and spent fuel.
Greece [A–21]	Uses the IAEA classification system (see below).

<table>
<tr><th>COUNTRY
[REFERENCE]</th><th>CLASSIFICATION SYSTEM</th></tr>
<tr><td>Hungary

[A–22]</td><td>Radioactive waste producing significant amount of heat is classified as high level waste. Heat generation is significant if it needs to be considered during the design of storage and disposal and during operation.

The rest of the radioactive waste are low and intermediate level waste which are to be classified considering the following aspects:

a) the low and intermediate level radioactive waste, in which the half-life of the radionuclides is 30 years or less and which contains long lived alpha emitter radionuclides only in limited concentration is considered short lived;

b) the low and intermediate level radioactive waste, in which the half-life of the radionuclides and/or the concentration of the alpha emitter radionuclides exceed the limits of short lived radioactive waste, is considered long lived.

The classification of the radioactive waste into low and intermediate level classes shall be performed based on the activity-concentration and exemption activity-concentration of the given radioisotope.</td></tr>
<tr><td>Indonesia

[A-23]</td><td>Low level waste:

• Very short half-life, which is nuclide has a half-life of less than 150 days
• Very low level: DSRS with half-life less than 15 years and activities above the exception level up to 10 MBq, DSRS has a half-life between 15 years to 30 years and activity above the exception level up to 100 kBq or others than DSRS which has activity concentration between exception level up to 100 times.
• Relative low level: DSRS with half-life less than 15 years and activity above 10 MBq up to 100 MBq, DSRS has a half-life between 15 years to 30 years and activity between 100 kBq up to 1 MBq or others than DSRS which has activity concentration between 100 Bq/g to 1000 times of exception rate for beta transmitters or between 100 Bq/g up to 400 Bq/g for alpha transmitters.

Intermediate level waste: DSRS with half-life less than 15 years and activity between 100 MBq up to 100 TBq, DSRS with half-life between 15 to 30 years and activity between 1 MBq up to 1 PBq, DSRS with half-life more than 30 years and activity between 40 MBq up to 10 GBq or other than DSRS which has concentration of activity between 1000 times of clearance level up to 100 GBq/g for beta and gamma transmitter or between 400 Bq/g up to 100 GBq for alpha transmitters

High level waste — spent nuclear fuel</td></tr>
<tr><td>International Waste Classification System

[A-24]</td><td>Exempt waste (EW): Waste that meets the criteria for clearance, exemption or exclusion from regulatory control for radiation protection purposes.

Very short lived waste (VSLW): Waste that can be stored for decay over a limited period of up to a few years and subsequently cleared from regulatory control according to arrangements approved by the regulatory body, for uncontrolled disposal, use or discharge.

Very low level waste (VLLW): Waste that does not necessarily meet the criteria of EW, but that does not need a high level of containment and isolation and, therefore, is suitable for disposal in near surface landfill type facilities with limited regulatory control.

Low level waste (LLW): Waste that is above clearance levels, but with limited amounts of long lived radionuclides. Such waste requires robust isolation and containment for periods of up to a few hundred years and is suitable for disposal in engineered near surface facilities.

Intermediate level waste (ILW): Waste that, because of its content, particularly of long lived radionuclides, requires a greater degree of containment and isolation than that provided by near surface disposal. However, ILW needs no provision or only limited provision, for heat dissipation during its storage and disposal.

High level waste (HLW): Waste with levels of activity concentration high enough to generate significant quantities of heat by the radioactive decay process or waste with large amounts of long lived radionuclides that need to be considered in the design of a disposal facility for such waste. Disposal in deep, stable geological formations usually several</td></tr>
</table>

COUNTRY [REFERENCE]	CLASSIFICATION SYSTEM
	hundred metres or more below the surface is the generally recognized option for disposal of HLW.
Italy [A-25]	Very short lived waste: Radioactive waste containing radionuclides with very short half-life, of less than 100 days, requiring up to 5 years to reach activity concentrations lower than values specified in legislation. This type of waste mainly arises. Very low level waste: Radioactive waste with activity concentration that doesn't meet the criteria set out for exempt waste, but though lower than 100 Bq/g with a maximum alpha contribute of 10 Bq/g for alpha emitting long lived radionuclides. Low Level Waste: Radioactive waste that doesn't meet the criteria established for exempt waste and that requires containment and isolation periods of up to a few hundred years in order to be disposed of. This category includes radioactive waste characterized by levels of activity concentration of up to 5 MBq/g for short lived radionuclides, of up to 40 kBq/g for the long lived isotopes of Nickel and of up to 400 Bq/g for long lived radionuclides. Intermediate level waste: Radioactive waste with activity concentrations exceeding the values set out for low level waste, though not requiring provisions for heat dissipation during its storage and disposal. This category includes waste containing long lived radionuclides that mostly requires a degree of isolation higher than that provided by near surface disposal facilities with engineered barriers, therefore requiring disposal in geological formations. This category includes also waste characterized by levels of activity concentrations of up to 400 Bq/g for alpha emitting radionuclides and mainly containing radionuclides beta/gamma emitters even long lived, with such an activity concentrations that they can be disposed of in near surface facilities with engineered barriers, provided that the level of activity concentration complies with the objectives of radiation protection established for the abovementioned surface disposal facility, such as, for instance, the waste containing activation products arising from the decommissioning of some parts of the nuclear facilities. High level waste: Radioactive waste with high activity concentrations, such as to generate a significant amount of heat or with high concentrations of long lived radionuclides or both of these characteristics, which require a degree of isolation and containment for a time period of thousands of years and over. This waste requires disposal in geological formations.
Japan [A-26]	Two basic solid waste categories: Category 1 or high level waste (HLW), which requiring geological disposal, e.g. vitrified waste that contains fission product separated from spent fuel during reprocessing. Category 2 or low level waste (LLW): all other radioactive waste, subdivided into several categories based on origin and type: (1) Long lived low heat radioactive waste from reprocessing and MOX fabrication (TRU waste) (2) Waste from power reactors, further subdivided as: relatively higher activity waste, e.g. irradiated core components; relatively lower activity waste, e.g. routine solid waste generated at NPPs and very low level radioactive waste (VLLW), e.g. bulk concrete & other low activity materials; (3) Uranium waste, waste generated from uranium enrichment and uranium fuel fabrication facilities; (4) Waste from research facilities, waste generated from research, medical and industrial facilities using or producing radioisotopes Spent fuel is not considered to be a waste in Japan. However, the policy of reprocessing and recycling of fuel is currently under review.
Jordan [A-27]	Category 1 is transitional waste, that contains small concentrations of significant radionuclides; this category of waste is additionally subdivided as follows: (1) category 1a is exempt waste, which means that this waste meets the criteria for clearance from regulatory control, as a result of appropriate processing and/or temporary storage for a few years; (2) category 1b is very low level waste (VLLW): waste that does not necessarily meet the criteria of exempt waste, but is suitable for disposal in surface landfill type facilities with limited regulatory control.

COUNTRY [REFERENCE]	CLASSIFICATION SYSTEM
	Category 2 is low and intermediate level waste (LILW): waste that, because of its radionuclides content, requires robust isolation and containment and no special measures for heat removal during its storage and disposal; this category of waste is additionally subdivided as follows: (1) Category 2a — low and intermediate level waste containing mainly short lived radionuclides (with a half-life no longer than Cesium-137 half-life) and also long lived radionuclides, but only at relatively low levels of activity concentration, limited for long lived alpha emitting radionuclides below $4\ 10^6$ Bq/kg for individual waste packages and an overall average of $4\ 10^5$ Bq/kg; (2) Category 2b — low and intermediate level waste containing long lived radionuclides at activity concentration levels for long lived alpha emitting radionuclides exceeding the limits for Category 2a mentioned in this subparagraph. Category 3 or high level waste (HLW): Waste with such large concentration of radionuclides that compared to low and intermediate level waste, a greater degree of containment and isolation from the accessible environment is needed to ensure its long term safety and heat generation shall be considered during storage and disposal in deep.
Kazakhstan [A-28]	By the activity level radioactive waste is classified as follows: Low level waste — a waste with specific activity (kilo Becquerel per kilogram): less than one thousand — for beta emitting nuclides, less than one hundred — for alpha emitting nuclides (excluding transuranium), less than ten — for transuranium nuclides; Intermediate waste — a waste with specific activity (kilo Becquerel per kilogram): from one thousand to ten million — for beta emitting nuclides, from one hundred to one million — for alpha emitting nuclides (excluding transuranium), for ten to one hundred thousand — for transuranium nuclides; High level waste — a waste with specific activity (kilo Becquerel per kilogram): more than ten million — for beta emitting nuclides, more than one million — for alpha emitting nuclides (excluding transuranium), more than one hundred thousand — for transuranium nuclides
Lithuania [A-29]	Very low level waste (VLLW): radioactive waste with radiological characteristic values exceeding clearance levels, however, lower than the characteristics for low level waste. VLLW will be disposed in licensed landfills. Low and intermediate level waste (LILW): radioactive waste with radiological characteristics between those of very low level waste and high level waste. These may be long lived waste (LILW-LL) or short lived waste (LILW-SL). LILW-SL will be disposed of in near surface repository at the site High level waste (HLW): spent fuel which shall be placed in deep geological repository due to its significant emitting capacity of a heat generated during radioactive decay or due to the contained amount of long lived radionuclides.
Madagascar [A-30]	exempt waste: It is the waste whose very low level of activity allows their elimination by conventional techniques, without any particular consideration for their radioactive properties. low and medium level waste: Short lived low level and intermediate level waste must be divided into three categories according to their radioactive period: (1) type 1 waste, which contains only radionuclides with a period of less than 6 days; (2) type 2 waste, which contains radionuclides with a period of between 6 and 71 days; (3) type 3 waste, which contains radionuclides with a period of more than 71 days. Long lived waste: This refers to waste whose average activity in long lived alpha emitters exceeds that set for short lived waste. High activity waste: It is waste with a thermal capacity of more than 2 kW per cubic meter and a concentration of long life emitters exceeding that set for short lived waste.

COUNTRY [REFERENCE]	CLASSIFICATION SYSTEM
Malaysia [A-31]	Cleared waste: materials containing level of radionuclides at activity concentrations less than specified in the legislation. All waste fall under this category can be disposed of at sanitary landfill without any further action. Low level (short lived)/decay waste: low level waste containing short lived radionuclides only (half lives less than 100 days) that will decay to clearance levels within three years after the times of its generation. Most of the radioactive waste comes from nuclear medicine activities fall under this category. Low and intermediate level short lived waste (LILW-SL): radioactive waste which will not decay to clearance levels within three years containing beta/gamma emitting radionuclides with half-lives less than thirty years or alpha emitting radionuclides with an activity concentration less than 400Bq/g and a total activity less than 4000Bq in each radioactive waste package. Low and intermediate level long lived waste (LILW-LL): radioactive waste containing radionuclides with activity concentrations more than LILW-SL but which does not generate heat at above 2 kW/m^3. High level waste (HLW): radioactive waste containing radionuclides with activity concentrations more than LILW-SL but which generates heat at above 2 kW/m^3.
Mexico [A-32]	Low level waste: (1) class A — radioactive waste that within a period of 100 years constitute a level of risk that is acceptable for population and environment; (2) class B — radioactive waste that within a period of 300 years constitute a level of risk that is acceptable for population and environment; (3) class C — radioactive waste that within a period of 500 years constitute a level of risk that is acceptable for population and environment. Intermediate level waste: radioactive waste whose risk remains above acceptable levels for more than 500 years. High level waste: radioactive waste arising from reprocessing of spent nuclear fuel and spent nuclear fuel itself, once the government declares it as waste. Mixed waste: radioactive waste mixed with other hazardous materials. Uranium and thorium tailings: radioactive waste arising from ore processing in a mill to extract metal content.
Montenegro [A-33]	Uses the IAEA classification system (see below).
Morocco [A-34]	Uses the IAEA classification system (see below).
Netherlands [A-35]	Exempt waste Short lived waste low level and intermediate level radioactive waste LILW (including NORM waste): (1) category A: alpha bearing waste; (2) category B: Beta/gamma contaminated waste from nuclear power plants; (3) category C: Beta/gamma contaminated waste from generators other than nuclear power plants with a half-life longer than 15 years; (4) category D: Beta/gamma contaminated waste from generators other than nuclear power plants with a half-life shorter than 15 years high level radioactive waste (HLW, non-heat-generating and heat generating): (1) heat generating, consists of the vitrified waste from reprocessing of spent fuel from the two nuclear power reactors in the Netherlands (Borssele and Dodewaard), the spent fuel of the two research reactors (Petten and Delft) and the spent uranium targets of the molybdenum production; (2) non-heat-generating, is mainly formed by the reprocessing waste other than

COUNTRY [REFERENCE]	CLASSIFICATION SYSTEM
	the vitrified residues. It also includes waste from research on reactor fuel and some decommissioning waste.
North Macedonia [A-36]	Cleared waste; Radioactive waste with radionuclides with a very short half-life: radioactive waste that may be stored over a limited period of time of a few years and be subsequently released from control; this class includes radionuclides used for research and medical purposes; Very low activity radioactive waste; Low activity radioactive waste: radioactive waste that is above release levels, but with limited amounts of long lived radionuclides; such radioactive waste requires robust isolation and containment for periods of up to a few hundred years and is suitable for disposal in engineered near surface facilities; low activity radioactive waste may include short lived radionuclides at higher levels of activity concentration and long lived radionuclides, but only at relatively low levels of activity concentration; Intermediate activity radioactive waste: radioactive waste that, because of its content, particularly of long lived radionuclides, requires a greater degree of containment and isolation than that provided by near surface disposal; such waste needs only limited provision for heat dissipation during its storage and disposal; it may contain long lived radionuclides, in particular alpha emitters, that will not decay to a level of activity concentration acceptable for near surface disposal; such radioactive waste requires disposal at greater depths, in the order of tens of metres to a few hundred metres; and High activity radioactive waste: such radioactive waste requires disposal in stable geological formations several hundred metres below the surface.
Norway [A–37]	Norwegian legislation does not specify any criteria for the classification of radioactive waste above exemption limits. Historically the following categories were used: spent fuel, ion exchange resins, ‘Some sources’ and the other waste. The waste was segregated according to half-life: (1) category I: ≤ 1 year; (2) category II: >1 ≤ 30 years; (3) category III: >30 years. Waste packages were sorted according to dose rate levels on the waste drum. For a contact dose rate of >10 mSv/hour, lead shielding is used inside the drums.
Poland [A-38]	Radioactive waste is classified into three categories with respect to the concentration of radioactive isotopes contained in the waste: low, medium and high level radioactive waste. These categories are further subdivided into subcategories according to the half live of radioactive isotopes and the concentration of radioactive isotopes contained in the waste. Liquid waste is additionally classified according to its activity concentration. Spent nuclear fuel intended for disposal is classified as a high level radioactive waste. The low, intermediate and high level waste is subsequently classified into subcategories: (1) transitional waste which will decay within the period of three years below the value defined in the legislation; (2) short lived waste — waste containing radionuclides of half-life <30 years with the restricted long lived radionuclides concentration to 4 000 kBq/kg in individual waste packages and to an overall average of 400 kBq/kg in the total waste volume, Long lived waste: waste whose long lived radionuclides activity exceeds 400 kBq/kg.
Portugal [A-39]	Uses the IAEA classification system (see below).
Romania [A-40]	Excluded radioactive waste (EW) is waste containing radionuclides with an activity concentration so small that the waste can be released from regulatory control (conditionally or unconditionally).

COUNTRY [REFERENCE]	CLASSIFICATION SYSTEM
	Transitional radioactive waste (TW) is waste having activity concentration above clearance levels, but which decays below clearance levels within a reasonable storage period (not more than 5 years). Very low level radioactive waste (VLLW) is short lived waste in which the activity concentration is above the clearance levels, but with a radioactive content below levels established by CNCAN for defining the low level waste. The disposal of very low level waste requires less complex arrangements than the disposal of short lived low level waste. Low and intermediate level radioactive waste (LILW) is radioactive waste in which the activity concentration is above the levels established by CNCAN for the definition of very low level waste, but with a radioactive content and thermal power below those of high level waste. Low level waste does not require shielding during handling or transportation. Intermediate level waste generally requires shielding during handling, but needs little or no provision for heat dissipation during handling or transportation. LILW is divided into two subcategories: (1) long lived radioactive waste is a waste containing radionuclides with half-life above 30 years in quantities and/or concentrations of activity above the values established by CNCAN, for which isolation from biosphere is necessary for more time than the institutional control duration; (2) short lived radioactive waste is a radioactive waste that is not long lived. High level radioactive waste (HLW) is: (1) liquid radioactive waste containing the most part of fission products and actinides existing initially in the spent fuel and forming the residues of the first extraction cycle of reprocessing; (2) the solidified radioactive waste of and spent fuel; and any other radioactive waste with activity concentration range similar to the waste mentioned above.
Russia [A-41]	All radioactive waste defined as removable RW are divided into 6 classes: Class 1 covers solid high level RW requiring final disposal in deep disposal facilities after prior storage to reduce heat generation. Class 2 covers solid high level RW and intermediate level long lived RW containing radionuclides with half-lives greater than 30 years that require final disposal in deep disposal facilities and not subjected to prior storage to reduce heat generation. Class 3 covers solid intermediate level RW and low level long lived RW containing radionuclides with half-lives greater than 30 years that require final disposal in near surface disposal facilities at a depth of up to 100 m. Class 4 covers solid low level RW and very low level RW requiring final disposal in nearsurface disposal facilities located at the ground level. Class 5 covers liquid intermediate level and low level RW requiring final disposal in deep well injection facilities constructed and operated at the time the Federal Law «On the Management of Radioactive Waste and Amendments to Certain Legislative Acts of the Russian Federation» came into force. Class 6 covers RW generated in mining and processing of uranium ores or during operations that are not associated with atomic energy use, namely, mining and reprocessing of mineral and organic raw materials with high concentrations of naturally occurring radionuclides that require final disposal in near surface disposal facilities. Numerical thresholds for the specific activity levels of radionuclides contained in RW provide distinction between classes 1-5 based on the period of RW potential hazard. RW classification based on RW specific activity. Based on specific activity levels, solid radioactive waste containing man-made radionuclides, except for spent sealed radionuclide sources are divided into 4 categories: very low level, low level, intermediate level and high level waste, whereas liquid waste are divided into 3 categories: low level, intermediate level and high level waste. If, according to the radionuclide characteristics, radioactive waste can be attributed to different categories, such waste shall be attributed to the highest possible category.

COUNTRY [REFERENCE]	CLASSIFICATION SYSTEM
Serbia [A-42]	Uses the IAEA classification system (see below).
Slovakia [A-43]	Uses the IAEA classification system (see below).
Slovenia [A-44]	Transitional radioactive waste — the activity of which decreases during storage below the limit value enabling their release into environment; Very low level radioactive waste, for which the competent regulatory body for nuclear and radiation safety may approve conditional clearance; Low and intermediate level radioactive waste (LILW), with insignificant heat generation, which is classified into two groups: (1) short lived LILW, containing radionuclides with a half-life shorter than 30 years and specific activity of alpha emitters equal to or lower than 4 000 Bq/g for an individual package, but on average not higher than 400 Bq/g in the overall amount of LILW; (2) long lived LILW, where specific activity of alpha emitters exceeds the limitations for short lived LILW; High level radioactive waste (HLW), which contains radionuclides whose decay generates such an amount of heat that it has to be considered in its management; NORM -radioactive waste containing naturally occurring radionuclides that are generated in processing of nuclear mineral materials or other industrial processes and are not sealed sources of radiation in accordance with the regulations on the use of radioactive sources and radiation practices.
South Africa [A-45]	Naturally occurring radioactive materials, low activity (NORM-L): potential radioactive waste containing low concentrations of NORM. Long lived radio nuclide concentration <100 Bq/g. Naturally occurring radioactive materials, enhanced activity (NORM-E): radioactive waste containing enhanced concentrations of NORM. Long lived radio nuclide concentration >100 Bq/g. Very low level waste (VLLW): radioactive waste containing very low concentration of radioactivity. Low and intermediate level waste — short lived (LILW-SL): radioactive waste with low or intermediate short/lived radionuclide and/or low long lived radionuclide concentrations (1) thermal power (mainly due to short lived radio nuclides (T ½ <31 y) <2 kW/m^3) and (2) long lived alpha radio nuclides (T ½ >31 y) concentrations: alpha: <400 Bq/g, beta and gamma: <4 000 Bq/g; or long lived alpha, beta and gamma emitting radionuclides at activity concentration levels that could result in inherent intrusion dose (the intrusion dose assuming the radioactive waste is spread on the surface) below 10 mSv per annum. Low and intermediate level waste — long lived LILW-LL: radioactive waste with low or intermediate short lived radionuclide and intermediate long lived radionuclide concentrations. Thermal power (mainly due to short lived radio nuclides (T ½ <31 y) <2 kW/m^3) and long lived alpha radio nuclides (T ½ >31 y) concentrations: alpha: <4 000 Bq/g, beta and gamma: <40 000 Bq/g or long lived alpha, beta and gamma emitting radionuclides at activity concentration levels that could result in inherent intrusion dose (the intrusion dose assuming the radioactive waste is spread on the surface) between 10 and 100 mSv per annum. High Level Waste (HLW): heat generating radioactive waste with high, long and short lived radionuclide concentrations with thermal power >2 kW/m^3 or long lived alpha, beta and gamma emitting radionuclides at activity concentration levels >levels specified for LILW-LL or Long lived alpha, beta and gamma emitting radionuclides at activity concentration

COUNTRY [REFERENCE]	CLASSIFICATION SYSTEM
	levels that could result in inherent intrusion dose (the intrusion dose assuming the radioactive waste is spread on the surface) above 100 mSv per annum
Spain [A-46]	Low and intermediate level waste (LILW), which include those whose activity is due mainly to the presence of beta or gamma-emit ting radionuclides with short or intermediate half-lives (less than 30 years) and whose content of long lived radionuclides is very low and limited. This group includes the subcategory of very low level waste (VLLW). Special waste (SW), generally metallic and presenting a high level of radiation through neutron activation; and other waste which, because of its radiological characteristics, is not eligible for management in the existing near surface level definitive disposal facility for LILW in Spain. Its management is connected to that of high level waste. High level waste (HLW) are those that contain long lived alpha emitters with half lives of more than 30 years in appreciable concentrations and that may generate heat as a result of radioactive decay, due to their high specific activity. This category includes spent fuel. Also included, for the purposes of integral management, are those other intermediate level waste (ILW) that in view of their characteristics are not eligible for definitive management under the conditions established for 'El Cabril' and that require specific installations for this purpose.
Sweden [A-47]	There is no legally defined waste classification system in Sweden for nuclear or radioactive waste. There are, however, established waste acceptance criteria for different disposal routes of nuclear and radioactive waste. Waste classification scheme used by the Swedish nuclear industry: Cleared material — material with so small amounts of radioactive nuclides that it has been released from regulatory control Very low level waste short lived (VLLW-SL) — contains small amounts of short lived nuclides with a half-life less than 31 years, dose rate on waste package is less than 0.5 mSv/h. Long lived nuclides with a half-life greater than 31 years can be present in restricted quantities. Low level waste short lived (LLW-SL) — contains small amounts of short lived nuclides with a half-life less than 31 years, dose rate on waste package (and unshielded waste) is less than 2 mSv/h. Long lived nuclides with a half-life greater than 31 years can be present in restricted quantities. Intermediate level waste short lived (ILW-SL) — contains significant amounts of short lived nuclides with a half-life less than 31 years; dose rate on waste package is less than 500 mSv/h. Long lived nuclides with a half-life greater than 31 years can be present in restricted quantities Low and intermediate long lived waste (LILW-LL) — contains significant amounts of long lived nuclides with a half-life greater than 31 years, exceeding the restricted quantities for short lived waste. High level waste (HLW) — (nuclear fuel) typical decay heat >2 kW/m^3 and contains significant amounts of long lived nuclides with a half-life greater than 31 years, exceeding the restricted quantities for short lived waste.
Switzerland [A–48]	High level waste (HLW): vitrified fission product waste from the reprocessing of spent fuel or spent fuel if declared as waste. Alpha-toxic waste (ATA): waste with a concentration of alpha-emitters exceeding 20 000 Bq/g of conditioned waste. Low and intermediate level waste (L/ILW): all other radioactive waste.

COUNTRY [REFERENCE]	CLASSIFICATION SYSTEM
Turkey [A-49]	Very short lived radioactive waste — their activities are above exemption levels and after a storage period of a few years at most they will be thus appropriate for clearance. No need to dispose, decay storage is the preferred option Very low level radioactive waste — They are not classified as very short lived waste and they have activity concentrations below approximately a hundred times of the clearance limits. Surface disposal is the preferred option for this class of waste. Low and intermediate level radioactive waste: (1) after conditioning, alpha emitting radionuclide concentrations are below 400 Bq/g for the average of whole package and below 4 000 Bq/g for an individual waste package. Near surface disposal is the preferred final solution for this class of waste; (2) after conditioning, alpha emitting radionuclide concentrations are above 400 Bq/g for the average of whole package and above 4 000 Bq/g for an individual waste package. Near surface disposal is the preferred final solution for this class of waste. High level waste — they are spent fuels declared as radioactive waste, radioactive waste which are products of reprocessing and may include fission products and actinides and other radioactive waste with comparable activity levels with those above. Deep geological disposal is final solution for this class of waste.
United Arab Emirates [A-50]	Uses the IAEA classification system (see above).
UK [A-51]	In the UK, historically, radioactive waste has been classified under the following broad categories, according to its heat generating capacity and activity content: High level waste (HLW) is waste in which temperature may rise significantly as a result of its radioactivity, so that this factor has to be taken into account in designing storage or disposal facilities. Intermediate level waste (ILW) is waste with radioactivity levels exceeding the upper boundaries for low level waste (LLW), but which does not require heating to be taken into account in the design of storage or disposal facilities. Low level waste (LLW) is defined as radioactive waste having a radioactive content not exceeding 4gigabecquerels per tonne (GBq/te) of alpha and/or 12 GBq/te of beta/gamma activity. This general definition does not directly equate to the waste acceptance criteria in place at specific disposal sites for LLW. Very Low Level Waste (VLLW), a subcategory of LLW is defined as: (1) low volume VLLW: radioactive waste which can be safely disposed of to an unspecified destination with municipal, commercial or industrial waste (‘dustbin’ disposal), each 0.1 m^3 of waste containing less than 400 kilobecquerels (kBq) of total activity or single items containing less than 40 kBq of total activity; (2) for waste containing carbon-14 or hydrogen-3 (tritium): in each $0.1m^3$, the activity limit is 4 000kBq for carbon-14 and hydrogen-3 (tritium) taken together; and for any single item, the activity limit is 400kBq for carbon-14 and hydrogen-3 (tritium) taken together. Controls on disposal of this material, after removal from the premises where the waste arose, are not necessary. (2) high volume VLLW Radioactive waste with maximum concentrations of 4megabecquerels per tonne (MBq/te) of total activity which can be disposed of to specified landfill sites. For waste containing hydrogen-3 (tritium), the concentration limit for tritium is 40 MBq/te. Controls on disposal of this material, after removal from the premises where the waste arose, will be necessary in a manner specified by the environmental regulators. The principal difference between the two definitions of VLLW is the need for controls on the total volumes of VLLW in the second (high volume) category being deposited at any one particular landfill site. Higher-activity waste In the UK, HAW is defined by UK Government as the collection of: HLW, ILW and the relatively small proportion of LLW that is not currently suitable for disposal in existing LLW disposal facilities (due to some chemical, physical or radiological property that is incompatible with the extant waste acceptance criteria).

COUNTRY [REFERENCE]	CLASSIFICATION SYSTEM
United States [A-52]	The USA has two waste classification systems: one for ‘civilian’ waste and the other for DOE (defense related) waste. For civilian waste, the categories are based on suitability for near surface disposal: Low Level Waste (LLW) is defined in regulation based on suitability for near surface disposal through consideration of concentrations of long and short lived radionuclides. It is subdivided into: (1) Class A low level waste is determined by characteristics listed in legislation. (The US does not have a minimum threshold for Class A waste); (2) Class B low level waste is waste that must meet more rigorous requirements on waste form than Class A waste to ensure stability; (3) Class C low level waste is waste that not only must meet more rigorous requirements on waste form than Class B waste to ensure stability but also requires additional measures at the disposal facility to protect against inadvertent intrusion. Greater than Class C waste (GTCC) is waste that exceeds the limits for Class C waste and is not generally acceptable for near surface disposal. High level waste (HLW): The highly radioactive material resulting from reprocessing of spent fuel, including liquid waste generated directly in reprocessing and any solid material derived from such liquid waste containing fission products in sufficient concentrations and other highly radioactive material that the NRC, consistent with existing law, determines by Rule requires permanent isolation. Spent fuel (SF) is fuel that has been withdrawn from a nuclear reactor following irradiation, the constituent elements of which have not been separated by reprocessing. For civilian applications, this is considered to be a waste. Byproduct material (uranium mill tailings), tailings or waste generated by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content. (Also referred to as AEA 11(e)2 waste.) The DOE classifies waste as: Low level waste (LLW): radioactive waste other than HLW, TRU and by-product material. High level waste (HLW): (similar to civilian definition). Transuranic waste (TRU): US DOE owned waste (mostly defense related) contaminated with human-made radioisotopes beyond or ‘heavier’ than uranium on the periodic table of the elements (long lived alpha emitting waste with concentrations greater than 3 700 Bq/g [100 nCi/g]). Subdivided into: contact handled TRU (CH): TRU waste with a surface dose rate of less than 200 millirem per hour or remote handled TRU (RH): TRU waste with a surface dose rate of 200 millirem per hour or greater Byproduct material*:* (similar to civilian definition). Spent fuel: The DOE does not consider spent fuel to be a waste.
Ukraine [A-53]	Low level waste — material with the special activities between 10 kBq/kg and 10 MBq/kg Intermediate level waste — material with the special activities between 10 MBq/kg and 100 GBq/kg High level waste — materials with the special activities over 100 GBq/kg
Uzbekistan [A-54]	Uses the IAEA classification system (see below).
Viet Nam [A-55]	Low level waste, very short lived (LLW-VSL) — waste contains only very short lived radionuclides (their half-life is shorter than 100 days) and can decay to the level lower than clearance levels within 5 years from generation Low and intermediate level waste, short lived (LILW-SL) — radioactive waste can not decay to the level lower than clearance levels within 5 years from generation and contains

COUNTRY [REFERENCE]	CLASSIFICATION SYSTEM
	radionuclides emitting beta/gamma with half-life from 100 days to 30 years or contains radionuclides emitting alpha with average activity concentration equal to or lower than 400 Bq/g Low and intermediate level waste, long lived (LILW-LL) — radioactive waste contains radionuclides having half-life longer than 30 years or contains radionuclides emitting alpha with average activity concentration higher that 400 Bq/g but activity concentration equal to or lower than 10^4 TBq/m^3 High level waste (HLW) — radioactive waste contains radionuclides with activity concentration higher than 10^4 TBq/m^3

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ANNEX 2.
SUMMARY OF NATIONAL WASTE MANAGEMENT STRATEGIES

TABLE A2–1. SUMMARY OF NATIONAL WASTE MANAGEMENT STRATEGIES

Country	VLLW	LLW	ILW	HLW	SF
Argentina	Planned engineered surface disposal, possibly combined with L&ILW-SL	Strategic plan reference case is ‘monolithic near surface repository’ for waste requiring <300 year isolation	Strategic plan reference case is ‘deep geological repository’ for waste requiring >300 year isolation	Strategic Plan reference case is ‘deep geological repository’	Decision for reprocessing or direct disposal of NPP SF to be made by 2030. Deep geological repository by 2060. For research reactor fuel the policy is to return to country of origin if possible or manage with NPP fuel otherwise
Australia	Waste below exemption limits can be free released	All federally owned waste are currently stored Site selection process under way for a national near surface disposal facility	All waste currently stored. National policy for long term management currently under review. Two volunteer sites as of June 2017 for a National Radioactive Waste Management Facility	N/A	Research reactor fuel only. Reprocessed internationally and returned to Australia as ILW for long term management
Austria	Policy is storage for decay, then free release	Currently stored at a central facility at Seibersdorf Required to move all waste to a final repository by 2030 Currently no reference plans for repository. Options include use of a multinational regional repository	Currently stored at a central facility at Seibersdorf Required to move all waste to a final repository by 2030 Currently no reference plans for repository. Options include use of a multinational regional repository	N/A	Research reactor fuel only. Policy is to return fuel to country of origin

Country	VLLW	LLW	ILW	HLW	SF
Belgium	(included in L&ILW-SL category)	Currently stored at central facility Planned surface disposal (at Dessel), license application 2013	Currently stored at central facility No formal decision yet. Reference planning case is deep disposal in 'poorly indurated clay formation' (Boom Clay or Ypresian Clay), colocated with HLW & SF	Currently stored at central facility No formal decision yet. Reference planning case is deep disposal in 'poorly indurated clay formation' (Boom Clay or Ypresian Clay), colocated with ILW-LL & SF	Some reprocessed but moratorium on further reprocessing until long term policy developed Extension of storage facilities on NPP sites Reference planning case is deep disposal in 'poorly indurated clay formation' (Boom Clay or Ypresian Clay), colocated with ILW-LL & HLW
Belarus	To be disposed in near surface facility with LLW. First stage of construction: 2028	To be disposed in near surface facility with VLLW. First stage of construction: 2028	To be disposed in near surface facility. First stage of construction: 2028	Planned to be disposed in deep GDF after lifetime of Belarussian Nuclear Power Plant (60 years)	Planned to be sent to the Russian Federation for reprocessing and returned as HLW. No plans to dispose SF SF from mobile test reactor sent to the Russian Federation without return
Brazil	N/A	Reference option is national repository, either near surface or deep, depending on selected site	Reference option is national deep repository	Reference option is national deep repository	No decision. Current policy is storage at reactor site pending outcome of future government review. Possibilities include deep disposal and reprocessing For research and other reactors, return to country of origin where applicable

Country	VLLW	LLW	ILW	HLW	SF
Bulgaria		Near surface national disposal facility at construction stage		Feasibility studies of GDF. Strategy for long term management and disposal should be developed and implemented Currently stored in the Russian Federation until the construction of a GDF. Technical specification of the waste-form not as yet defined	Reprocessing in Russia Interim storage in wet and dry facilities
Canada	Mainly managed as part of L&ILW. Near surface disposal facility under licensing for Canadian Nuclear Laboratories (CNL) VLLW/LLW	Existing storage by each major waste owner Deep repository under licensing for Ontario Power Generation's (OPG's) L&ILW Canadian Nuclear Labs assessing long term hosting possibilities at Chalk River Labs	Existing storage by each major waste owner Deep repository under licensing for OPG's L&ILW	N/A.	Planned deep disposal at a volunteer host site in either crystalline or sedimentary rock
China	Policy is storage for decay, then free release	Existing and planned regional near surface repositories	For alpha bearing waste, planned deep disposal colocated with HLW	Planned deep disposal at a centralized facility	Policy is for reprocessing of NPP SF, except PHWR SF Research reactor SF, planned deep disposal colocated with HLW

Country	VLLW	LLW	ILW	HLW	SF
Croatia		Long term interim storage implemented by 2025 at possible Central National Storage Facility (CNSF). Joint solution with Slovenia needed by 2023 LLW and ILW near surface disposal repository (2058), joint solution with Slovenia favourable	Long term interim storage implemented by 2025 at possible Central National Storage Facility (CNSF). Joint solution with Slovenia needed by 2023 LLW and ILW near surface disposal repository (2058), joint solution with Slovenia favourable	GDF for HLW/SF in Croatia/Slovenia — site selection to begin in 2050	Long term dry storage (construction to begin 2018 — take SF 2019) at NPP until 2043, then common disposal solution with Slovenia will be sought
Czech Republic	N/A	Existing surface disposal (at Dukovany power plant site) Existing underground cavern disposal (at Bratrství for NORM waste and at Richard for institutional waste)	Reference case is deep disposal, colocated with HLW & SF	Reference case is deep disposal, colocated with SF & ILW-LL	Reference case is deep disposal (~2065), colocated with ILW-LL & HLW. However, other options (e.g. reprocessing and regional international repository) have not been excluded
Denmark	N/A	Conditioned and unconditioned waste held at Danish Decommissioning Storage facility	Conditioned and unconditioned waste held at Danish Decommissioning Storage facility	N/A	Small amount stored securely awaiting a decision on the final management. Interested in an international solution. Otherwise will be included as RW in Denmark — interim storage then disposal
Estonia	N/A	Facility for storage at Paldisci site Feasibility study to establish repository (near surface) implemented 2014	Facility for storage at Paldisci site Feasibility study to establish repository (near surface) implemented 2014	N/A	N/A

Country	VLLW	LLW	ILW	HLW	SF
Finland	Clearance for reuse, recycle or disposal in land fill	Existing underground cavern disposal (at each reactor site) Proposed Fennovoima reactor planning its own repository for L&ILW	Planned disposal with decommissioning waste in extension of existing L&ILW repositories Proposed Fennovoima reactor planning its own repository for L&ILW	N/A	Construction licence received for deep repository at Olkiluoto, starting in 2022 Proposed Fennovoima reactor started investigating its own SF disposal in summer 2016
France	Existing surface disposal (at Morvilliers)	Existing surface disposal (at Centre de l'Aube)	For ILW LL – Options currently under study. Reference assumption is deep disposal, possibly colocated with HLW For LLW LL (e.g. graphite) — reference assumption is dedicated shallow underground repository	Reference plan is deep disposal (ongoing investigations at Bure)	Policy is for reprocessing of NPP and most research reactor SF Remaining research reactor fuels — reference plan is for deep disposal, possibly colocated with HLW
Germany	N/A	Planned deep disposal for 'waste with negligible heat generation' (at Konrad) in 2027 Some waste disposed of in Asse II mine and Morsleben repository	Planned deep disposal for 'waste with negligible heat generation' (at Konrad) in 2027 Some waste disposed of in Asse II mine and Morsleben repository Planned deep disposal for "heat generating waste' site decision by 2031	Planned deep disposal for 'heat generating waste' site decision by 2031	Planned deep disposal for NPP SF, site not yet decided For research reactor fuels, return to country of origin or manage with NPP fuel
Greece	N/A	Planned national disposal facility	Planned national disposal facility	N/A	From research reactor to be shipped back to USA until 2019 SF disposal not presently considered

Country	VLLW	LLW	ILW	HLW	SF
Hungary	N/A	Existing near surface repository for institutional waste at Püspökszilágy (now full but a safety enhancement programme is ongoing resulting in freeing capacity) Geological repository at Bátaapáti for the NPP origin waste	Currently stored at Püspökszilágy and at site of origin and ILW-SL disposed in Bátaapáti Planned disposal route is the future DGR	Planned disposal route is the future DGR Underground research laboratory planned	Planned disposal route is the future DGR No decision on reprocessing vs disposal taken yet,, however, the reference scenario is direct disposal
Indonesia	Decay storage until clearance	Decay storage until clearance	Currently stored in interim storage	N/A	Policy is to store at spent fuel wet storage
Italy	Clearance for reuse, recycle or disposal in land fill	Currently stored at site of origin. Plan for national repository by 2020	Currently stored at site of origin. Plan for national repository for ILW-LL, HLW & SF	Plan for national repository for ILW-LL, HLW & SF	Policy is for foreign based reprocessing of most SF (except certain research fuels) Plan for national repository for ILW-LL, HLW & SF
Japan	Existing demonstration surface disposal (at Tokai) Other surface facilities planned	Existing near surface disposal (at Rokkasho)	Planned deep, possibly colocated with HLW (effects of interactions with HLW currently under study)	Planned deep. Siting process under way	Policy is for reprocessing of SF Current policy under review in light of Fukushima accident
Republic of Korea, Republic of	N/A	Rock cavern facility at Wolsong under construction		Planned deep disposal for NPP SF and HLW, site not yet decided	Planned deep disposal for NPP SF and HLW, site not yet decided Reprocessing option still open
Latvia	N/A	Disposed of at RADONS near surface repository	Disposed of at RADONS near surface repository if return is not possible	N/A	N/A

Country	VLLW	LLW	ILW	HLW	SF
Lithuania	Landfill facility under construction	LILW-SL will disposed in the near surface repository, under licensing. Operation is planned for 2023-2038. LILW-LL interim storage in Ignalina NPP until 2066. Disposal in planned deep geological repository	LILW-SL will disposed in the near surface repository, under licensing. Operation is planned for 2023-2038. LILW-LL interim storage in Ignalina NPP until 2066. Disposal in planned deep geological repository	N/A	Stored in Ignalina NPP. Disposal in planned deep geological repository
Luxembourg	N/A	Disused sealed sources to be exported to Belgium for disposal	Disused sealed sources to be exported to Belgium for disposal	N/A	N/A
Malaysia	Waste is stored for decay and released when radioactivity below then clearance level	Plan to have near surface disposal facility for low level waste. There is a closed near surface disposal facility for NORM waste	N/A	N/A	N/A
Malta	N/A	To identify private/governmental entity to set-up and run storage facility for industrial and disused sealed sources etc Disposal option will be sought before 30 years have elapsed — either a) export of material, b) bore hole disposal, c) any other multilateral solution as may become available	To identify private/governmental entity to set-up and run storage facility for industrial and disused sealed sources etc Disposal option will be sought before 30 years have elapsed — either a) export of material, b) bore hole disposal, c) any other multilateral solution as may become available	N/A	N/A

Country	VLLW	LLW	ILW	HLW	SF
Netherlands	Storage (at COVRA) followed by future free release	Existing 100 year storage (at COVRA), followed by planned deep disposal for all waste types in a single geological repository (2130)	Existing 100 year storage (at COVRA), followed by planned deep disposal for all waste types in a single geological repository (2130)	Existing 100 year storage (at COVRA), followed by planned deep disposal for all waste types in a single geological repository (2130)	Reprocessing Existing 100 year storage (at COVRA), followed by planned deep disposal for all waste types in a single geological repository (2130)
Romania	N/A	Institutional waste, existing rock cavity (former uranium mine at Baita-Bihor) NPP waste, reference plan is for a near surface repository at Saligny	Planned deep, possibly colocated with HLW & SF	Planned deep, possibly colocated with L&ILW-LL & SF	Reference case is deep geological disposal. Various geological formations being investigated
Serbia		Storage in Vinca Facility. Long term near surface disposal plans to be formulated in the future	Storage in Vinca Facility. Long term near surface disposal plans to be formulated in the future	N/A	
Slovakia	Planned at Mochovce site. First module commissioned in 2016. Second module planned commission in 2018	Existing surface disposal at Mochovce since 1999	Planned deep disposal, combined with HLW Planned geological disposal (by 2065) or multinational solution Stage 1 of site selection completed	Planned deep disposal, combined with ILW-LL Planned geological disposal (by 2065) or multinational solution Stage 1 of site selection completed	Interim SF dry sore facilities in operation. Planned geological disposal (by 2065) or multinational solution

Country	VLLW	LLW	ILW	HLW	SF
Slovenia	N/A	Planned near surface disposal adjacent to Krško NPP	Planned near surface disposal adjacent to Krško NPP	Planned HLW disposal with SF in deep geological repository	For NPP SF, reference plan is storage until ~2065, followed by deep disposal in either Slovenia or Croatia. Other options, such as multinational regional repository, are also being considered For research fuel, policy is to return to country of origin where possible, otherwise manage with NPP fuel
South Africa	Existing surface disposal or decay storage and free release (e.g. recycle)	Existing surface disposal at Vaalputs	No decision on disposal technology. Reference plan of medium to deep repository May be combined with HLW in a single deep repository	No decision on disposal technology. Reference plan of deep repository May be combined with ILW-LL in a single deep repository	No decision. Current policy is storage at reactor site pending outcome of government review. Possibilities include long term surface storage, transmutation, deep disposal and reprocessing
Spain	Existing surface disposal (at El Cabril)	Existing surface disposal (at El Cabril)	Medium term reference plan is centralized storage along with HLW for 50 to 100 years No decision taken on technology for final disposal Reference planning assumption is deep, potentially colocated with HLW & SF	Medium term reference plan is centralized storage along with SF for 50 to 100 years No decision taken on technology for final disposal Reference planning assumption is deep, potentially colocated with ILW-LL & SF	Medium term reference plan is centralized storage for 50 to 100 years No decision taken on technology for final disposal Reference planning assumption is deep, potentially colocated with HLW & ILW-LL

Country	VLLW	LLW	ILW	HLW	SF
Sweden	Existing surface disposal (at each nuclear site)	Existing underground cavern disposal (at SFR) Expansion of SFR to handle decommissioning waste under licensing	Interim storage at existing BFA Simpevarp site Planned deep disposal starting in about 2045. Site not yet selected	N/A	Planned deep repository at Forsmark site. Construction licence application filed in 2011. Expected operation in 2025
Switzerland	N/A	Planned deep disposal, possibly colocated with repository for long lived waste and HLW Comprehensive site selection process for repository has started for LLW & SL-ILW	Planned deep, colocated with HLW & SF Comprehensive site selection process for repository has started for HLW, LL-ILW & SF	Planned deep, colocated with ILW-LL & SF Comprehensive site selection process for repository has started for HLW, LL-ILW & SF	Some reprocessed and some planned for direct deep disposal (utilities could choose option, but as of 2006, there is a 10 year moratorium on reprocessing, which was prolonged for another 10 years in 2016)
Turkey	Institutional waste are stored in Istanbul. Reference plan for them is storage followed by surface disposal together with NPP waste	Institutional waste are stored in Istanbul. Reference plan for them is storage followed by near surface disposal, together with NPP waste	Institutional waste are stored in Istanbul. Reference plan for them is storage followed by near surface disposal, together with NPP waste	For NPP HLW, they are planned to be stored on-site during the lifetime of the NPP	For NPP SF, the Law enforces on-site storage for the lifetime of the NPP. Spent fuels which are declared as radioactive waste are planned for direct disposal in the deep geological repository
Ukraine		Centralized near surface disposal at Vector Complex in Zone of Special Industrial Use	Centralized near surface disposal at Vector Complex in in Zone of Special Industrial Use	Vitrified waste to be returned from the Russian Federation, then long term interim storage (100 years) before geological disposal Centralized long term storage facility at Vector Complex in Zone of Special Industrial Use approved	Defined long term interim storage for SF (100 years). No plans post 100 years

Country	VLLW	LLW	ILW	HLW	SF
UK	Conventional surface land fill facilities	Existing surface disposal (at LLWR&Dounreay) Other facilities may be developed if required	Current practice is 'passively safe' interim storage at major nuclear sites Reference future plan is deep disposal, colocated with HLW	Current practice is 'passively safe' interim storage at major nuclear sites Reference future plan is deep disposal, colocated with ILW-LL	Mostly reprocessed. Decision of whether to reprocess or dispose left to waste owner, based on economics. If disposed, would be in a single collocated deep facility
USA	A portion of Class A waste is equivalent to VLLW; such waste is disposed in an existing commercial surface disposal (at Clive, Utah)	Existing commercial surface disposal (at Clive UT, Hanford WA, Barnwell SC, Andrews TX)	Currently ILW-LL (called 'greater than class C' or GTCC) is stored at various sites Disposal options for GTCC have been analysed and a final decision is pending Defense related transuranic waste disposed at existing geological facility WIPP	Licensing activities for a repository at Yucca Mountain are suspended due to lack of appropriate funding by Congress; a strategy is being pursued with plans to develop a consolidated interim storage facility and a geological repository	Licensing activities for a repository at Yucca Mountain are suspended due to lack of appropriated funding by Congress; a strategy is being pursued with plans to develop a consolidated interim storage facility and a geological repository

ANNEX 3.
NATURE AND ROLE OF THE WASTE MANAGEMENT ORGANIZATION (AS OF 31 DECEMBER 2016)

TABLE A3–1. NATURE AND ROLE OF THE WASTE MANAGEMENT ORGANIZATION (AS OF 31 DECEMBER 2016)

Country	Waste Management Organization (WMO)	Responsibilities	Ownership
Albania	Institute of Applied Nuclear Physics	Management and storage of and radioactive waste	State
Argentina	The National Atomic Energy Commission (CNEA)	Management of radioactive waste	State
Armenia	No specified WMO		
Australia	Australia's Nuclear Science and Technology Organisation (ANSTO)	Management of radioactive waste	State
Austria	Nuclear Engineering Seibersdorf GmbH (NES)	Management of radioactive waste	State
Azerbaijan	Specialized Enterprise 'Isotope'	Management of radioactive waste	State
Belarus	Specialized Enterprise UE Ekores	Management of radioactive waste	State
Belgium	Belgian National Agency for Radioactive Waste and enriched Fissile Material (ONDRAF/NIRAS)	Development and operation of disposal facilities for all types of radioactive waste and spent fuel.	State
Bosnia and Herzegovina	No specified WMO		
Bulgaria	State Enterprise Radioactive Wastes (SE RAW)	Management of radioactive waste	State
Canada	NWMO	Development and operation of disposal facility for spent fuel	Utility
	(other waste owners)	Management and disposal of their own waste	Utility/State/Private
China	No specified WMO		
Croatia	No specified WMO		
Cuba	Centre for Radiation Protection and Hygiene (CPHR).	Management of radioactive waste	State
Cyprus	No specified WMO		

Country	Waste Management Organization (WMO)	Responsibilities	Ownership
Czech Republic	Czech Radioactive Waste Repository Authority (SÚRAO)	Development and operation of radioactive waste and spent fuel storage and disposal facilities	State
Denmark	Danish Decommissioning	Management of all radioactive waste	State
Estonia	Waste Management Organisation A.L.A.R.A. Ltd.	Management of all radioactive waste	State
Finland	Posiva Oy	Development and operation of disposal facility for spent fuel. Low level waste disposal is the direct responsibility of the NPPs.	Utilities
France	French National Agency for Radioactive Waste Management ANDRA	Development and operation of disposal facilities for all types of radioactive waste.	State
Georgia	Department for Radioactive Waste Management	Management of radioactive waste	State
Germany	Federal Office For Radiation Protection (BfS)	Development and operation of disposal facilities for all types of radioactive waste and spent fuel.	State
Ghana	Radioactive Waste Management Centre (RWMC)	Management of radioactive waste	State
Hungary	Public Agency for Radioactive Waste Management (PURAM)	Management of radioactive waste and spent fuel and decommissioning of nuclear facilities.	State
Indonesia	National Nuclear Energy Agency of Indonesia (BATAN)	Management of spent fuel and radioactive waste	State
Islamic Republic of Iran, Islamic Republic of	Islamic Republic of Iran Nuclear Waste Management Company (INWM Co.)	Management of spent fuel and radioactive waste	State
Ireland	No specified WMO		
Italy	Decommissioning and waste management company (SOGIN)	Decommissioning of nuclear facilities and management of radioactive waste	Public
Japan	Nuclear Waste Management Organization of Japan (NUMO)	Development and operation of disposal facility for HLW	State
Jordan	Jordan Atomic Energy Commission (JAEC)	Management of spent fuel and radioactive waste	State
Korea, Republic of	Korea Radioactive Waste Agency (KORAD)	Development and operation of storage and disposal facilities for all types of radioactive waste and spent	State

Country	Waste Management Organization (WMO)	Responsibilities	Ownership
		fuel, and management of radioactive waste management fund	
Latvia	State Ltd ‘Latvian Environment, Geology and Meteorology Centre’	Management of all radioactive waste	State
Lithuania	Radioactive Waste Management Agency (RATA)	Management of RAW and transportation to Ignalina NPP for treatment, storage and disposal.	State
Luxembourg	No specified WMO		
Malaysia	Nuclear Malaysia	Management of radioactive waste	State
Mexico	National Institute for Nuclear Research (ININ)	Management of radioactive waste	State
Moldova, Republic of	National Radioactive Waste Management Company	Storage of radioactive waste	State
Morocco	The National Center for Energy and Nuclear Science and Technology (CNESTEN)	Management of radioactive waste	State
Poland	Radioactive Waste Management Plant (RWMP)	Management of radioactive waste and spent fuel	State
Portugal	School of engineering and technology (Instituto Superior Técnico, IST)	Management of radioactive waste	State
Romania	Nuclear Agency and for Radioactive Waste (ANDR)	Development and operation of disposal facilities for all types of radioactive waste and spent fuel.	State
Russian Federation	National Operator for Radioactive Waste Management (NO RAO)	Development and operation of disposal facilities all types of radioactive waste. Predisposal management is distributed among several organizations as FSUE RosRAO, Moscow Radon, etc.)	State
Serbia	Public Company Nuclear Facilities of Serbia	Management of radioactive waste	State
Slovakia	Slovakia's Nuclear and Decommissioning Company (JAVYS)	Development and operation of storage and disposal facilities for all types of radioactive waste and spent fuel, operation of centralised waste processing facilities, and decommissioning of nuclear facilities.	State
Slovenia	Agency for Radwaste Management	Development and operation of storage and disposal facilities for all	State

Country	Waste Management Organization (WMO)	Responsibilities	Ownership
		types of radioactive waste and spent fuel.	
South Africa	National Radioactive Waste Disposal Institute (NRWDI)	Management of radioactive waste and spent fuel.	State
Spain	Spanish Radioactive Waste Management Organization (ENRESA)	Development and operation of storage and disposal facilities for all types of radioactive waste and spent fuel. Decommissioning of reactors.	State
Sweden	Swedish Nuclear Fuel and Waste Management Company (SKB)	Development and operation of storage and disposal facilities for all types of radioactive waste and spent fuel.	Utilities
Turkey	Turkish Atomic Energy Authority (TAEK)	Disposal of radioactive waste and spent fuel	State
Ukraine	SA Radon	Management of radioactive waste	State
United Kingdom	Nuclear Decommissioning Authority (NDA)	Overseeing strategic management of radioactive waste and spent fuel including waste from historical operations	State
United States of America	Department of Energy (DOE)	Development and operation of disposal facilities for spent fuel, certain ILW (greater than class C LLW) and DOE owned or generated radioactive waste.	State
	States/Compacts	Responsible for disposal of LLW (disposal occurs at commercially operated facilities)	
Viet Nam	No specified WMO		

ANNEX 4.
FINANCING SCHEMES AND FUNDING MECHANISMS FOR SPENT FUEL AND RADIOACTIVE WASTE (AS OF 31 DECEMBER 2016)

TABLE A4–1. NATURE AND ROLE OF THE WASTE MANAGEMENT ORGANIZATION (AS OF 31 DECEMBER 2016)

	Funding of RWM	Funding of SF and HLW management	Funding of decommissioning
Argentina	Producers pay for RWM	Facility Operator, which means State	Owner is responsible for providing the resources required for the safe decommissioning of the nuclear power plant
Armenia	Producers pay for RWM in case of waste from NPP, governmental funding for other institutional waste	Facility funding	Decommissioning fund
Australia	Governmental funding	Governmental funding	Governmental funding
Austria	Segregated Trust Fund for RWM	Governmental funding	Governmental funding
Belarus	Operator’s financial assets or State funding	Operator’s financial assets	Operator’s financial assets
Belgium	Producer pays, contribution to ONDRAF/NIRAS long term fund. For Radium waste: Producer pays ‘Long term’ fund by licence holders	NPP operators contribute to the fund managed by SYNATOM	NPP operators contribute to the fund managed by SYNATOM; various funds for historical liabilities fed by state; Transfer of financial means to ONDRAF/NIRAS (waste funds managed by ONDRAF/NIRAS) when waste is transferred to ONDRAF/NIRAS
Bosnia and Herzegovina	Governmental funding	Not applicable	Governmental funding
Brazil	Operator or Governmental funding	Operator (Governmental) funding	Operator (Governmental) funding
Bulgaria	Payments to Radioactive Waste Fund	Operators payments to Radioactive Waste Fund and international contributors	Operators payments to Nuclear Facilities Decommissioning Fund and international contributors
Canada	Each licensee must create its fund	Each licensee must create its fund	Each licensee must create its fund
Chile	Producers pay for RWM	Governmental funding	Governmental funding
China	Provided by the generator and the related government	Collection of the funds into a dedicated account based the electricity production	Provided by the generator and the related government
Croatia	Producers pay disposal fee to ‘Fund for Financing the	The ‘Fund for Financing the Decommissioning of	The ‘Fund for Financing the Decommissioning of the Krsko Nuclear

	Funding of RWM	Funding of SF and HLW management	Funding of decommissioning
	Decommissioning of the Krsko Nuclear Power Plant and the Disposal of Radioactive Waste and Spent Nuclear Fuel’	the Krsko Nuclear Power Plant and the Disposal of Radioactive Waste and Spent Nuclear Fuel’	Power Plant and the Disposal of Radioactive Waste and Spent Nuclear Fuel’
Cyprus	Producers pay for RWM	Not applicable	Not applicable
Czech Republic	Producers pay for RWM	Specific fund by licence holders held by government	Decommissioning fund
Denmark	Producers pay for RWM	The state carries the financial liability	Governmental funding
Estonia	Producers pay for RWM	The state carries the financial liability	Governmental funding
Finland	Producers pay for RWM	Nuclear Waste Management Fund	Nuclear Waste Management Fund
France	Producers pay for RWM, partly government funded	Specific funds set aside by NPP operators Other facilities partly government funded	Specific funds set aside by NPP operators Other facilities partly government funded
Georgia	Producers pay for RWM. In case of legacy waste founded by state	Provided by waste producer. In case of legacy waste founded by state	Governmental funding
Germany	Private facilities setting aside provisions. State owned facilities financed by public funds. Small waste producers pay fees to the Land collecting facilities	Private facilities setting aside provisions State owned facilities financed by public funds	Private facilities setting aside provisions State owned facilities financed by public funds
Greece	Producers pay for RWM	Governmental funding	Licensee, Governmental funding
Hungary	Central Nuclear Financial Fund	Central Nuclear Financial Fund	Central Nuclear Financial Fund
Iceland	Producers pay for RWM	N/A	N/A
Indonesia	Producers pay for RWM	Producers responsibility	Producers responsibility
Ireland	Producers pay for RWM	N/A	N/A
Italy	Producers pay for RWM	Partly funds set aside by NPP, but due to early shutdown, these are insufficient. Additionally, levy on electricity	Levy on electricity

	Funding of RWM	Funding of SF and HLW management	Funding of decommissioning
Japan	Producers pay for RWM	Electrical utilities establish a fund	Electrical utilities establish a fund
Kazakhstan		Governmental funding and international donors	Governmental funding and international donors
Korea, Republic of	Producers pay for RWM	Radioactive Waste Management Fund operated by Government (KORAD)	Decommissioning cost of NPPs is accumulated by Korea Hydro & Nuclear Power Co. and for research reactors by the government.
Latvia	Producers pay for RW predisposal management, State pays for disposal	N/A	Governmental funding
Lithuania	Producers pay for RWM	Funds provided by NPP, State and international contributors	Funds provided by NPP, State and international contributors
Luxembourg	Producers pay for RWM	N/A	N/A
Malaysia	Producers pay for RWM	Producers responsibility	Producers responsibility
Malta	Producers pay for RWM	N/A	N/A
Mexico	Producers pay for RWM, governmental funding	Governmental funding	Governmental funding
Moldova, Republic of	Producers pay for RWM	N/A	N/A
Montenegro		N/A	N/A
Netherlands	Producers pay for RWM	Producers fund the processing and long term management	Financial guarantee to fund future decommissioning and resulting waste management costs
Nigeria	Producers pay for RWM	N/A	N/A
Norway	Producers pay for RWM	Producers responsibility	Producers pay, partly governmental funding
Oman	Producers pay for RWM	N/A	N/A
Poland	Producers pay for RWM	Decommissioning fund or State budget (in case of the research reactor)	Decommissioning fund or State budget (in case of the research reactor)
Portugal	Producers pay for RWM	Producers responsibility	Producers responsibility
Romania	Producers pay for RWM	Producer has to pay fee to radioactive waste management funds	Producer has to pay fee to decommissioning fund or State budget (in case of the research reactor)

	Funding of RWM	Funding of SF and HLW management	Funding of decommissioning
Russian Federation	Since 11 July 2011 the producer has to pay to special reserve fund, previous waste management is responsibility of the state	The law requires a fund contributed to by operators and government for storage and research	The law requires a fund contributed to by operators and government for decommissioning
Serbia	Governmental funding	Governmental funding	Governmental funding
Slovakia	National Nuclear Fund, in case of management of waste of unknown origin, otherwise waste producer is responsible, disposal of RW is financed National Nuclear Fund paid by operators and State	Storage and disposal of HLW and SF is paid by National Nuclear Fund paid by operators and the State	National Nuclear Fund paid into by operators and State; in case of NPP V-1 also the European Union contributes
Slovenia	Producers pay for RWM	Fund raised by NPP operators (Slovenia and Croatia)	Fund paid by NPP operators (Slovenia and Croatia). Slovenian funding through Fund for Decommissioning of Krško Nuclear Power Plant and the disposal of radioactive waste from Krško Nuclear Power Plant.
South Africa	Producers pay for RWM, in the long term Owners contribute to national radioactive waste management fund, which is to be established	Producers pay for RWM, in the long term Owners contribute to national radioactive waste management fund, which is to be established	Owners/Waste producers pay
Spain	Producers pay for RWM	Fund from NPP operators and payments for waste management services	Fund from NPP operators and payments for waste management services
Sweden	Disposal of operational waste paid directly by the operators	Nuclear Waste Fund —collected as a fee on nuclear power production	Nuclear Waste Fund included in the fee for SF and decommissioning
Switzerland	Producers pay for RWM	Liability is with the NPP-owners, after final Waste Management Fund	Liability is with the NPP-owners, after final shutdown Decommissioning Fund
Turkey	Producers pay for RWM	Radioactive Waste Account —collected as a fee on nuclear power production, other producers also pay for this Account	Decommissioning Account -collected as a fee on nuclear power production, other producers also pay for this Account
Ukraine	Producers pay for RWM	Governmental funding	Governmental funding
United Arab Emirates	Producers pay for RWM	Annual Contributions by Nuclear Facility operator to ‘Decommissioning Trust Fund’ (DTF)	Annual Contributions by Nuclear Facility operator to ‘Decommissioning Trust Fund’ (DTF)

	Funding of RWM	Funding of SF and HLW management	Funding of decommissioning
United Kingdom		Operational waste management including low level waste disposal is paid for by the operators. Future disposal of spent fuel and other waste will be paid for by the Government with a contribution from a levy on nuclear electricity production.	Governmental funding for Decommissioning costs for the NDA estate. Decommissioning costs for the currently existing AGR and PWR reactors will be met through the Nuclear Liabilities Fund
United States of America	Producers pay for RWM	Private operators of facilities must demonstrate capability to fund operational waste management. Public facilities obtain government funding For spent fuel and HLW disposal operators have paid into a Nuclear Waste Fund (currently suspended)	Private operators of facilities must demonstrate capability to fund decommissioning. Public facilities obtain government funding
Viet Nam	Currently: Producers pay for RWM, in Long Term: Owners contribute to National Radioactive Waste Management Fund to be established	Currently: Waste producers pay fee for RWM, in Long Term: Waste producers contribute to National Radioactive Waste Management Fund to be established	Decommissioning Fund from fee on the nuclear energy

ANNEX 5.
NATIONAL STRATEGIES FOR DISUSED SEALED SOURCE MANAGEMENT

TABLE A5–1. NATIONAL STRATEGIES FOR DISUSED SEALED SOURCE MANAGEMENT

	Strategy for DSRS management
Albania	Return to supplier or to any other supplier of radioactive sources inside or outside the country at a radioactive waste management facility
Argentina	The storage of radioactive disused sources is allowed only in the facility as long as the holder of the license is able to demonstrate that they have a specific programme for its reuse or to use it in replacement of another source existing at the site In case the holder does not have an adequate place for temporary storage of the radioactive sources or in case of any other situation determined by the regulator, the sources must be sent to a safe storage site
Armenia	Final decision to be specified in the national strategy, the 'return to the country of origin' is under consideration
Australia	Repatriation to manufacturer where possible at the end of useful life. Otherwise storage awaiting disposal. Allows re-entry of disused sources
Austria	Return to supplier or transfer to waste management organization
Belarus	The user/holder can either transport disused sealed sources to the national waste management organization as waste or can return them to the producer
Belgium	The user/holder can either transport disused sealed sources to the national waste management organization as waste or can return them to the producer
Bosnia and Herzegovina	Disused sealed sources are returned to supplier or stored in interim storages
Botswana	Disused sealed sources are returned to supplier or manufacturer
Brazil	Storage at waste management organization while awaiting a final decision on disposal
Bulgaria	Returning to the manufacturer or disposal
Canada	Disused sealed sources are returned to supplier or sent to a licensed waste management facility. The re-entry of previously exported sealed sources is permitted
Chile	Disused sealed sources are returned to supplier or managed as radioactive waste in the country
China	Returned to original manufacturer, delivered for storage or disposal, clearance, reuse
Croatia	Each disused sealed source first has to be offered to those who would use it for other purposes, if there is no possibility to reuse, the source will be handled in the central national repository
Cuba	Returning to the manufacturer or transferred to waste management organization
Cyprus	Disused source to be returned to the supplier/manufacturer
Czech Republic	Disused sealed sources are disposed in operating disposal facilities and in planned DGR or returned to the country of origin

	Strategy for DSRS management
Denmark	Disused sealed sources are returned to the manufacturer or transferred to waste management organization
Estonia	Disused sealed sources are either returned to the manufacturer or transferred to the national waste management organization
Finland	Options are to have an agreement with the provider for returning the source or transfer to national authorities for storage pending disposal
France	Return to manufacturer. Disposal or recycling routes being implemented
Georgia	All existed DSRS have Soviet origin and kept in the CSF In case of import of new source, importer will receive the permit only in case if he warrants sending of the source back when it becomes unused
Germany	Return to the manufacturer or shipper, or delivery as radioactive waste to a Land collecting facility with the objective of disposal in deep geological formations
Ghana	Disused sealed sources are encouraged to be returned to the original supplier or manufacturer
Greece	Return to the manufacturer. Orphan sources are stored in National RW Interim Storage and Management Facility until final disposal solution
Hungary	Disused sources are stored at the Radioactive Waste Treatment and Disposal Facility at Püspökszilágy. Hungarian manufacturers of radioactive sources are required to take back radioactive sources produced by them if users within Hungary or abroad request it. These sources are either re-furbished or stored in the facility at Püspökszilágy
Iceland	Return to supplier
Indonesia	Return to supplier or if it is not possible, transfer for management to waste management organization. DSRS can also be reused and recycled.
Ireland	Return of disused sealed sources to the manufacturer is the main management route
Italy	Return to supplier or transfer to waste management organization
Japan	Disused sources with long half-life and high activity are sent back to the manufacturers, rest are stored by the authorities. The re-entry of previously exported sealed sources is permitted
Jordan	Return to the supplier, if possible; otherwise storage in waste management facility until finding international or regional solutions for DSRS management and disposal
Kazakhstan	Disused sealed sources are allowed for re-entry if it has accepted that they should be returned to a qualified manufacturer
Korea, Republic of	Research ongoing on management options
Latvia	Primarily return to supplier, if not possible, transfer to waste management organization
Lesotho	Return to supplier if possible
Lithuania	Return to supplier or transfer to waste management organization
Luxembourg	Return to supplier or export to Belgium
Malta	Return to supplier if possible, exploring disposal option within Malta

	Strategy for DSRS management
Montenegro	Return to supplier if possible, if not, the sources are stored in the radioactive waste storage facility
Morocco	Return to supplier or transfer to waste management organization
Netherlands	If reuse is not possible, disused sealed sources are preferably returned to the supplier or manufacturer. All radioactive waste is transferred to COVRA, followed by storage in above ground facilities at COVRA
Nigeria	Return to supplier
North Macedonia	The disused sealed radioactive sources imported in North Macedonia shall be returned to the manufacturer or the supplier. No manufacturing or remanufacturing of sealed radioactive sources takes place inside the country
Norway	Primarily return to supplier, if not possible transfer to waste management organization. The re-entry of previously exported disused sealed sources is permitted
Oman	Return to supplier
Peru	Return to supplier or management at the waste management organization
Poland	Primarily return to supplier, if not possible transfer to waste management organization
Portugal	Disused sealed sources must return to manufacturer or repository
Moldova, Republic of	Return to supplier or transfer to waste management organization for disposal
Romania	Return to supplier or transfer to waste management organization
Russian Federation	Treatment and subsequent transfer to the National Operator for disposal
Senegal	Return to supplier
Slovakia	Primarily return to supplier, if not possible transfer to waste management organization for storage and disposal
Slovenia	Primarily return to supplier, if not possible transfer to waste management organization
South Africa	Returned to supplier or recycling/reuse of the source. Disposal routes are investigated
Spain	Return to supplier. If not possible, disposal El Cabril. If acceptance criteria not met, temporary storage at El Cabril until the CTS is available. Then, disposal once available
Sweden	Disused sealed sources are returned to the supplier or stored/disposed
Switzerland	Recycling if possible, otherwise management as radioactive waste
Turkey	Return to the supplier, if not possible, storage at the waste management organization
Ukraine	Users of the radiation sources are taxed
United Arab Emirates	Return to the supplier
United Kingdom	Return to supplier or transfer to a recognized storage facility. Re-entry of sources manufactured nationally is allowed

	Strategy for DSRS management
United States of America	Return to supplier. Disposal, reuse or recycle
Uruguay	Return to the supplier
Viet Nam	Return to supplier or transfer to waste management organization

ANNEX 6.
CURRENT AND FORECASTED AMOUNTS OF SPENT FUEL IN STORAGE AND DISPOSED IN SELECTED COUNTRIES (T HM)

TABLE A6–1. CURRENT AND FORECASTED AMOUNTS OF SPENT FUEL IN STORAGE AND DISPOSED IN SELECTED COUNTRIES (T HM)

Country	Year	Spent fuel in storage (t HM)	Spent fuel reprocessed or recycled (t HM)	Spent fuel disposed (t HM)
Argentina	2016	4 620	0	0
	2030	8 275	0	0
	2050		0	0
Canada	2016	52 522	0	0
	2030	NA	0	NA
	2050	79 451	0	16 800
Finland	2016	2 099	0	0
	2030	3 138	0	
	2050	4 109	0	
France	2016	14 000	10 000	0
	2030	15 000	11 000	0
	2050			0
Germany	2016	8 485	6 865	0
	2030	10 500	6 865	0
	2050	10 500	6 865	0
Hungary	2016	1 246	277	0
	2030	1 953	277	0
	2050	2 126	277	0
Indonesia	2016	0.3	0	0
	2030	0.7	0	0
	2050	1.5	0	0
Italy	2016	16	1 910	0
	2030	2.5	1 914	0
	2050	1.5	1 914	0
	2016	15 106		

Country	Year	Spent fuel in storage (t HM)	Spent fuel reprocessed or recycled (t HM)	Spent fuel disposed (t HM)
Korea, Republic of	2030	25 554		
	2050	32 433		
Lithuania	2016	2 416	0	0
	2030	2 416	0	0
	2050	2 416	0	0
Mexico	2016	638	0	0
	2030	975	0	0
	2050	1 455	0	0
Russia	2016	22 449	55	0
	2030		6 500	0
	2050		19 500	0
Slovakia	2016	1 578		
	2030	1 970		
	2050	2 986		
Slovenia	2016	470		
	2030	673		
	2050	900		
Spain	2016	4 975	2 060	0
	2030	6 692	2 060	0
	2050	6 692	2 060	0
Sweden	2016	6 759	236	
	2030	9 500	236	
	2050	4 000	236	8 000
Turkey	2016	0	0	0
	2030	723	0	0
	2050	3 351	0	0
United Kingdom	2016	4 690	62 000	
	2030		65 000	

Country	Year	Spent fuel in storage (t HM)	Spent fuel reprocessed or recycled (t HM)	Spent fuel disposed (t HM)
	2050		65 000	

ANNEX 7.
FORECAST OF VOLUMES OF DIFFERENT TYPES OF WASTE IN STORAGE AND DISPOSED IN SOME COUNTRIES (AS DISPOSAL VOLUMES)

TABLE a7–1. FORECAST OF VOLUMES OF DIFFERENT TYPES OF WASTE IN STORAGE AND DISPOSED IN SOME COUNTRIES (AS DISPOSAL VOLUMES)

Country	Year	HLW (m^3)		ILW (m^3)		LLW (m^3)		VLLW (m^3)	
		stored	disposed	stored	disposed	stored	disposed	stored	disposed
Argentina	2016	160	0	40	170	6 120	2 497		
	2030		0		170		2 497		
	2050		0						
Austria	2016		0	60		2 240			
	2030		0	60		3 600			
	2050						3 600		
Canada	2016			33 155		2 359 000			
	2030	NA		NA		NA			
	2050			31 591	40 005	10 573	2 800 023		
Croatia	2016			3		10			
	2030			4		1 494			
	2050			5		1 781			
Finland	2016				2 160		6 020		
	2030				7 100		8 020		
	2050				7 900		9 820		
France	2013	3 650	0	135 000	0	74 100	843 000	154 000	328 000
	2030	5 700	0	161 000	0	110 000	1 100 000	200 000	770 000
Germany	2016	565	0	13 898	8 375	127 189	75 378	0	0
	2030	1 470	0	17 017	16 400	153 000	147 600	0	0
	2050	1 470	0	2 002	36 400	18 000	327 600	0	0
Hungary	2016	0	0	3 354	1 733	5 086	2 889	2 034	1 155
	2030	0	0	1 661	4 800	1 819	8 000	727	3 200
	2050	0	0	700	4 800	0	10 400	0	0
Italy	2016	0	0	8 573	0	17 390	0	16 497	0

Country	Year	HLW (m^3)		ILW (m^3)		LLW (m^3)		VLLW (m^3)	
		stored	disposed	stored	disposed	stored	disposed	stored	disposed
	2030	38	0	11 463	0	22 511	26 416	7 753	10 117
	2050	38	0	13 713	0	1 684	54 595	1 557	20 910
Latvia	2016			18	35	55	783		
	2030			32	35	80	1 774		
	2050			37	35	110	1 774		
Lithuania	2016			10 000	0	100 000	0	40 000	0
	2030			4 000	1 000	50 000	30 000	35 000	30 000
	2050			4 000	1 000	50 000	80 000	35 000	50 000
Mexico	2016					7 174	58		
	2030					10 710	58		
	2050					15 763	58		
Poland	2016			206	11	1 161	1 584	19	993
	2030			234	11		2 884		1 194
	2050								
Russia	2016	6 350 000		99 400 000		322 000 000		1 000	0
	2030								
	2050								
Slovakia	2016			26		7118	14 892	11 117	600
	2030			1 000		25 000	36 912	0	14 000
	2050			1 000		10 000	43 644	0	23 000
Spain	2016	6 900	0	200	0	6 836	32 198	11 020	7 612
	2030	9 200	0	800	0	No value	53 000	No value	39 000
	2050	9 200	0	800	0	No value	92 000	No value	110 000
Sweden	2016	0	0	5 300	0	8 500	38 922	2 900	27 841
	2030	0	0	11 500	0	30 000	60 000	2 000	51 540
	2050	0	0	10 000	5 000	5 000	140 000	0	53 540

Country	Year	HLW (m^3)		ILW (m^3)		LLW (m^3)		VLLW (m^3)	
		stored	disposed	stored	disposed	stored	disposed	stored	disposed
Turkey	2016	0	0	500	0	2000	0	-	0
	2030	4	0	4 680	0	-	0	-	0
	2050	27	0	13 790	0	-	0	-	0
United Kingdom	2016	1 660	0	148 000	0	36 100	0	1 510	
	2030	1 500	0	188 000	0	262 000		181 000	
	2050	1 500		249 000		397 000		688 000	

KEY ASSUMPTIONS RELATING TO THE ABOVE FORECASTS AS NOTED IN THE NATIONAL PROFILES

Canada

Forecast based on the assumption that 16 800 MTHM of Spent Fuel would have been disposed of at the NWMO DGR by 2050 and no fuel reprocessing is expected to take place in Canada. Quantities of LLW/ILW will be emplaced in disposal/long term management facilities by 2050. The volume represents the forecast amount remaining in storage at 2050. One disposal facility has a design capacity of 200 000 m^3, with an expansion to 400 000 m^3 by 2100. This facility will include disposal of both LLW and ILW and the breakdown of capacity by waste type is not available. As such, the full capacity for 2050 and 2100 has been recorded in each category — LLW and ILW as well. LLW in 2050 is foreseen to be mainly contaminated soil which will remain at its present location.

France

The key assumptions made for this forecast are:

- the continuation of nuclear power production;
- an operating period of between 50 and 60 years for the reactors in the current nuclear power plant fleet;
- the gradual replacement of the reactors in the current nuclear power plant fleet with EPR reactors, then with FNR reactors, which could eventually comprise the entire future fleet;
- the reprocessing of all spent fuel. By convention, this assumes that:
    - there are fuel reprocessing plants available to perform these operations,
    - materials separated during fuel reprocessing are recycled in current PWR reactors and EPR reactors (mono-recycling), then in FNR reactors allowing multirecycling.

Germany

2030

- Commissioning of Konrad repository approximately 2022. (Assumption: Disposal of 10 000 m^3 per year starting from 2023.)
- The retrieval of radioactive waste from the Asse II mine is not taken into account, presently. The retrieval activities will be included in this forecast when more valid estimates regarding the retrieval rate are possible (comparable cleanup site).
- The amount of depleted uranium (DU) is not included in this forecast. In case that it will not be reutilised, the DU that has been generated and will be generated in Germany as a result of uranium enrichment shall as a precaution be considered in the disposal planning. The expected waste package volume of waste resulting from uranium enrichment is up to 100 000 m^3 of depleted uranium. The timepoint when DU is considered waste as it cannot be reutilized isn't clear yet and is therefore not included in the estimates.
- A repository for heat generating waste starts operation after 2050.

2050

- Commissioning of Konrad repository approximately 2022. (Assumption: Disposal of 10 000 m^3 per year starting from 2023.)
- The retrieval of radioactive waste from the Asse II mine is not taken into account, presently. The retrieval activities will be included in this forecast when more valid estimates regarding the retrieval rate are possible (comparable cleanup site).

- The amount of depleted uranium (DU) is not included in this forecast. In case that it will not be reutilised, the DU that has been generated and will be generated in Germany as a result of uranium enrichment shall as a precaution be considered in the disposal planning. The expected waste package volume of waste resulting from uranium enrichment is up to 100 000 m^3 of depleted uranium. The timepoint when DU is considered waste as it cannot be reutilized isn't clear yet and is therefore not included in the estimates.
- A repository for heat generating waste starts operation after 2050

Hungary

Pending decision on the closure of the fuel cycle, spent fuel is not considered waste in Hungary. The waste amounts include all institutional waste and NPP operational and decommissioning waste. In case of NPP it was assumed that the already existing four units will be shutdown in 2032-2037 and the two new units will start operating in 2025 and 2026.
The Hungarian national waste inventory is based on the previous IAEA waste categorization using categories LILW (LILW-SL, LILW-LL) and HLW. Currently the VLLW category does not exist in Hungary. All the waste that could potentially fall into this category are included in the LILW-SL class.
For institutional waste and NPP operation waste, it was assumed that from total LILW volume the VLLW is about 20%, LLW 50% and ILW 30%. Regarding HLW, all the waste to be disposed of in a future deep geological repository, so practically all the high level and/or long lived waste, are included.

Poland

It was assumed that NPP will be built after 2030 and the new disposal facility will be operational in 2025. The forecast does not include operational waste in RWMP Swierk, which are in short time successively processed and sent to Storage or Disposal in Rozan. For forecast at 2030 also assumed that VLLW and LLW will be in short time successively processed and disposed.

Spain

Spent fuel in included in HLW.

Sweden

Assumptions in the forecast include six nuclear reactors planned for long term operation (up to 60 years) and seven reactors planned for or in decommissioning. In the forecast for 2030 the amount of waste in storage is expected to be higher because of a planned pause for six years in disposal of waste in SFR due to the construction of the extended SFR. In the forecast for 2050 it is assumed that no additional shallow landfill facilities will be constructed.

Turkey

The assumptions include Akkuyu NPP expected to generate radioactive waste from the year 2023. NPP design includes ten years of storage of L-ILW and VLLW; however, the capacity of the storage may be extended to the lifetime for these classes of radioactive waste, in case the disposal facility is not in operation in Turkey after 10 years of NPP operation. HLW will be stored on-site for lifetime of the NPP.
According to reference plan spent fuel will be stored on-site during the lifetime of the NPP. After that the spent fuel will be disposed of in the deep geological facility. However, there is an option for reprocessing regarding the economics of fuel cycle which may be assessed later.
Near surface disposal facility is planned to be constructed in Turkey, but the forecasts don't include disposal inventory. LILW rad-waste stored in CNAEM storage and processing facility will be transported to near surface disposal facility when it becomes operational.
After, National Radioactive Waste Management Plan is finalised by TAEK, forecasts on stored and disposed inventory will be reassessed.

United Kingdom

Future waste arisings are materials that are activated or contaminated by radioactivity that already exist (for example in-reactor structures), but will only arise as waste during the decommissioning of nuclear facilities and site cleanup. Other radioactive waste (that from future planned operations) has yet to be produced. In general, the volumes of future arisings reported reflect current waste management practices. Long term forecasts also take into account net of HLW exports to overseas customers.