

Preserving the environment on the ITER site

From January-October 2007, a site of 180 hectares next to the CEA Cadarache center will be prepared for the construction of ITER. Care has been taken to minimize the environmental impact of this work. This document provides answers to the most frequently asked questions.

What work is planned on the ITER site in the coming months?

Overseen by the Agence ITER France, the first works for the preparation of the ITER site, located near the CEA Cadarache site, will start during the second half of January. This will be the clearing of a zone of 90 hectares (a first tranche of 75 hectares, followed at a later date by another 15 hectares) by a consortium of regional companies (Macagno, Dolza and SMAG-Jaubert) employed by the National Office of Forests. The aim is to keep as much of the ITER site (180 hectares in total) wooded as possible.

The work will be carried out in several phases enabling the best co-ordination possible of the different operations planned for the site: tree-felling, removal of remains, removal off-site of tree trunks and branches for re-use, ground surface clearance, followed by protection measures for protected species, signposting of preservation areas and a preventative archaeological inventory.

Other works are related to the construction of a crossroads, the erection of a provisional fence around the site, the network for fluids under the supervision of the Societe des Eaux de Marseille/Societe du Canal de Provence, etc.. The co-ordination of health and safety on this "enclosed and independent " construction site will be carried out by Apave.

Has an environmental inventory been carried out ?

The environmental inventory carried out in 2002 and 2003 consisted in identifying the flora and fauna for which specific protection measures would be necessary. The conclusions of the study are that species of importance to the local heritage are only present on the ITER site at a very limited level.

Four species (invertebrate fauna) have been identified : the Sawyer (a beetle protected at the European level, but very common in the region); two butterflies (the Proserpine, protected at national level and the Melanargia Occitanica, common in the PACA region); the Occitanian Cricket (fairly common in Spain). A few specimens of these insects have been found at the north-west limit of the ITER zone in an area of dry meadowland, where a protected orchid (*Ophrys Provincialis*) has also been identified.

A further study will be undertaken by the Office National des Forêts in collaboration with the chiropter group of Provence to survey bats living in the area of the ITER construction site (about 200 hectares). Particularly the Serotine and Barbastelle species that are relatively rare in the Mediterranean sectors such as the ITER site, but more common in the Pre-Alps zone. This study will also include a general study to identify trees that act as reservoirs of biodiversity.

Have the zones with environmental issues been identified ?

The zones with environmental issues requiring special measures to be taken have been identified. The zones for protection of flora and fauna are few: one is located at the NW edge of

the site where the orchids and Occitanian Cricket are found; another is in the middle of the zone to be cleared: this is a possible nesting area of the woodlark (*Lullula arborea*) and also the home to a rare (but not protected) butterfly species (*Melanargia Occitanica*) and a protected species (*Proserpine*).

What measures are being taken to preserve this natural area ?

In order to preserve the nature area of the ITER site, several measures have been set out before work starts, in order to preserve the rare and/or protected flora and fauna:

- Identification and protection of the zones which are richest in biodiversity.
- Marking the trees to be preserved
- Moving some trees such as old oaks favoured by larva of the Large Capricorn, a species of beetle rare in northern Europe, but very common in the Mediterranean region (where it can be considered as a danger for wooden structures)
- A study for installation of nesting-boxes for bats on the ITER site
- Tree felling to be carried out before the end of March, outside the nesting period

These measures relating to various species (the Large Capricorn, Occitan cricket; two butterflies – *Proserpine* and *Melanargia Occitanica* – three birds: the woodlark, Dartford Warbler, European nightjar) and two species of orchid (*Ophrys provincialis* and *drumana*) that have been identified in this space have been drawn up in collaboration with the regional environment office, the Office National des Forêts and the Provence group of chiropterists.

There will be no construction work on the environmental zone identified to the NW of the site, which will be enclosed from the start of any work with no access allowed. This zone is the lowest one of the ITER site. The initial plan was for the water treatment unit and the control basin to be located there. These units have been moved eastwards. In the same way, a zone of about 1 hectare to the north of la Verrerie that had been designated as an industrial zone will now be preserved due to there being many trees considered to be “reservoirs of biodiversity” and particularly a habitat for the Large Capricorn.

The cost of the measures aimed at protecting the environment (studies, action plan, environmental monitoring) are an estimated 50,000 Euro before tax.

Will some of the ITER site remain as woods ?

The aim is to keep about half the ITER site as woods. The clearance planned for a zone totalling 90 hectares will take place in two stages. The work will be done by a consortium of regional companies (*Macagno*, *Dolza* and *SMAG-Jaubert*) overseen by the Office National des Forêts.

The first stage will be the clearance of an area of 75 hectares for the buildings in the “nuclear zone”, power supply areas, work areas, site fence and a possible backfill area. A zone of 15 hectares for the office buildings, visitors’ centre, medical centre, storm basins and fluids network will be cleared later.

Various solutions are planned for managing the rubble, which could partially be reused at the construction site.

Why a site of about 180 hectares?

The size of the ITER site has been established to take account of the number of buildings to be erected. In total, around 20 buildings will be constructed divided in two main zones:

A **nuclear zone**, which itself will be made up of 3 distinct parts:

- The experimental buildings: the tokamak building to house the ITER machine itself, the assembly hall, the diagnostic hall, a hotcell for the exchange of the first wall components, and the tritium handling building.
- The buildings for the systems necessary for the functioning of the tokamak: electricity supplies, cooling pumps, cryogenic systems, etc)
- A control room

A **services area** housing the offices, the staff restaurant and a visitors' centre.

There are plans for a possible storage area for surplus material from the levelling works. Situated in the southern part of the site, it could be shaped and covered in vegetation when the work is finished to reduce the impact on the landscape in the medium term.

Were provisions made for compensation regarding the acquisition of the ITER site at Cadarache ?

The Ministry of Agriculture has been compensated for the acquisition of the ITER site (about 180 hectares) by the CEA by the exchange of a piece of land of 312 hectares in a forest in Burgundy.

Have plans been made against the risk of fire ?

Many preventative measures against the risk of fire will be taken: clearance of a 50 metre wide fire-break around the work zone, prohibiting of fires, making participating companies aware of the risk, putting in place specific preventative measures for work and meteorological conditions, etc.

What are the main milestones for the next six months ?

Tree-felling on the first 75 hectares will be carried out before the end of March 2007. Work to enable the erection of a provisional fence should be completed in April 2007. This temporary fence will be erected 30 meters away from the area foreseen for the permanent fence to be erected in October 2007. In the zone between the temporary fence and the permanent fence, only ground vegetation will be removed to limit fire risks.

Work relating to the "nuclear zone" of about 47 hectares should be finished by summer 2007, with the ground levelling work planned for the end of summer 2007.

Work on the area of about 13 hectares for the storage of rubble from this ground levelling should be finished in June 2007. (At most a zone of 6 of these 13 hectares will be cleared in the first half of 2007. The current levelling studies will define the actual area needed for this zone) The National Office of Forests has carried out a landscape study specific to this zone which could be completely replanted at the end of the construction works for ITER.