

# **Risk Screening for Biodiversity**

**Galp's Integrated Biodiversity Assessment**

**December 2020**

**Safety and Sustainability Department**

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## ACRONYMS AND ABBREVIATIONS

AZE	Alliance for Zero Extinction
CR	Critically Endangered
E&P	Exploration & Production
EN	Endangered
G&P	Gas and Power
LC	Last Concern
LPG	Liquified Petroleum Gas
IBAS	Important Bird Areas
IBAT	Integrated Biodiversity Assessment Tool
IUCN	International Union for Conservation of Nature
NT	Near Threatened
UNEP	United Nations Environment Programme
VU	Vulnerable
SPA	Special Protection Area

## 1. Introduction

Biodiversity is a complex network of genetic codes, species, ecosystems, and ecological processes that supports life on Earth and provides human societies with food, pharmaceutical assets, natural resources, and a set of ecological services and spiritual, cultural, and recreational benefits. This immeasurable asset is, nowadays, more than ever at risk due to anthropogenic activities.

The potential impact of Oil&Gas industry activities is recognizable. The development of human societies maintains its dependency on energy consumption and oil and gas will most likely continue – for decades to come – to respond to this incessant demand.

There is therefore a conflict between the growing need for exploration and utilization of natural resources and the conservation of biodiversity, responsible for keeping the balance of the biosphere and the world as we know it.

For an organization in the Oil&Gas sector, the challenge is to satisfy the demand for energy resources and to meet the expectations of society regarding the corporate, social, and environmental responsibility of organizations. Many leading companies have found strategic, operational, financial, and reputational benefits in including biodiversity conservation in the establishment of policies and operations and decision-making processes (Galp, 2012).

Galp develops activities into more and more geographical areas. In each one, several species are an important element for the multitude of life forms on the planet. Biodiversity is defined as "the variability among living organisms, including beings from terrestrial and marine ecosystems and other aquatic systems, and the ecological complex that they belong to. This includes the diversity among species, within species, and of ecosystems (United Nations Convention on Biological Diversity, Article 2).

## 2. Objective and scope

### 2.1 Objective

Given the importance of preserving biodiversity and the growing expansion of Galp, there is the continuing need to identify protected biodiversity areas and priority conservation areas, linked to the Company's sites.

Thus, with this study, **the coverage of Galp sites is analysed in terms of areas of importance for biodiversity and also the number of IUCN species**. This document provides a summary of

all the information on biodiversity concerning Galp sites, which materializes in a support tool with the indication of sites requiring priority action from the Company.

The scope of this report extends to all Galp sites, except for the Retail area (Service Stations and Filling Stations). This analysis highlights the inclusion of the entire upstream projects portfolio of the Company, with projects at different stages of development (operation; sanctioned and/or pre-sanctioned; etc...), to keep up with the strong growth of this business segment.

To minimize our operational impacts on biodiversity, we have Company Guidelines that establish general biodiversity principles and allow us to determine the sensitivity of the area of influence of our operations. Namely:

- Assessment and Management of the Environmental and Social Impacts of Activities, Products, and Services; Galp (2014a).
- Good Biodiversity Management Practice Guide. Galp (2012).
- Integrating Biodiversity into Upstream Project Site Selection. Galp (2014c).
- Social and Environmental Impact Assessments (SEIA) processes in Upstream Projects. Galp (2014b).

To carry out this analysis we used the Integrated Biodiversity Assessment Tool for Business (IBAT), created by IBAT Alliance, constituted by BirdLife International, Conservation International, International Union for the Conservation of Nature (IUCN), and the UNEP World Conservation Monitoring Centre (UNEP-WCMC).

## 2.2 Scope

There are a **total of 85 facilities and sites**, where Galp has activity, considered in this report, which is grouped as follows:

- Exploration & Production (E&P) (32) (3 onshore and 29 offshore);
- Storage Facilities & Terminals (24);
- Cogeneration Units (2);
- Biofuels (3);
- Refining (2);



- Renewable Energy Sources (22).

The list of sites under analysis can be consulted in detail in Annex I as well as the respective coordinates used in the application of the tool.

**In this analysis, any area classified in the categories listed above is called, for simplification, an area of high interest for biodiversity.** However, this does not mean that areas excluded from this type of classification are not relevant for biodiversity preservation.

It should be noted that the present study intends to analyse only the location of the Galp sites given the presence of areas with high interest for biodiversity. Therefore, it does not substitute the conducting of a detailed assessment of environmental risks and impacts eventually produced by the respective business units of the Company, which is included, for example, in the Environmental Impact Assessment.

### 3. Methodology

#### 3.1 IBAT

IBAT is an interactive mapping tool, applicable to any sector of activity, which gathers information on biodiversity from globally recognised databases, classified by institutions that are members of IBAT alliance (IBAT, 2019).

The information presented is based on various products of IUCN, such as: biodiversity areas (priority conservation areas), world database of protected areas (local and international coverage, including IUCN areas from categories between I and VI, wetlands - Ramsar and UNESCO World Heritage site) and Red List of Threatened Species™ (IBAT, 2019).

This analysis includes the following categories of areas of importance for biodiversity:

- International Union for Conservation of Nature (IUCN) protected areas (category I to VI);
- Key Biodiversity Areas;
  - o Important Bird and Biodiversity Areas
  - o Alliance for Zero Extinction Sites (AZE)
- Natura 2000 network;
- Ramsar;
- UNESCO World Heritage.

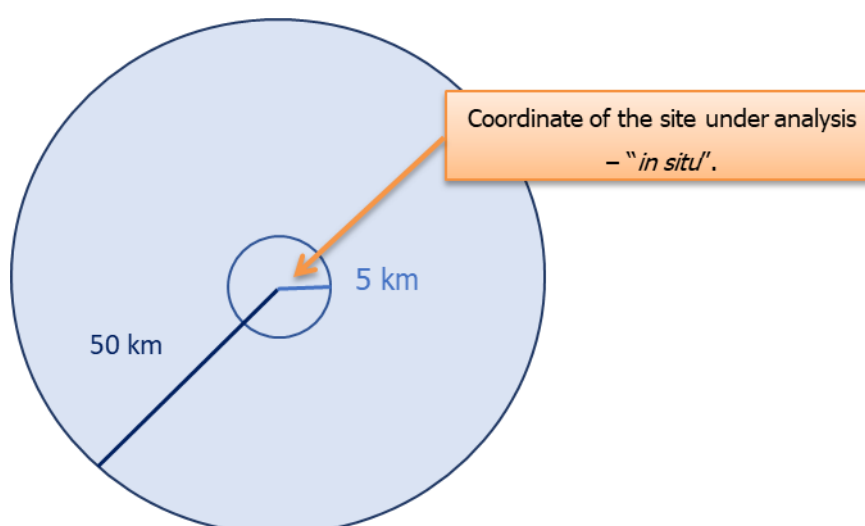


These areas are identified in the area of influence or near facilities that Galp manages or holds a share of, with IBAT. In the Glossary, you will find a brief description of the characteristics and criteria underlying the classification of the above areas, as well as other terms used in this document.

The analysis of the area covered by sites with the areas of high biodiversity interest, obtained through the IBAT tool, is presented in two different formats: by country and by activities.

In the first format, the results are presented by country, in the form of maps.

**The analysis of the biodiversity associated with each site is performed on three different scales: in situ, within a radius of 5 km, and within a radius of 50 km (Figure 1).** The first analysis is characterized by the checking of the site at the location, i.e. whether it is or not inserted in the geographical limits of an area with high interest for biodiversity. Then, the surroundings of the site are analysed, applying two different radii, for a more detailed reconnaissance of the surrounding areas. As part of this analysis of biodiversity in Galp sites, "close" is considered to be an area located within a radius of 5 km from the site, followed by the analysis of the area covered, within a radius of 50 km, as exemplified in Error! Reference source not found. Therefore, closer a site is to an area of importance for biodiversity, the more vulnerable it will be. However, each activity represents characteristic impacts, which are presented in the Environmental Impacts Assessment associated with each facility.



**Figure 1** - Analysis approach to the site's surroundings, with the distinction of the radii of 5 and 50 km.

Then, in each area of interest for biodiversity, identified within the limits of approach (5 and 50 km) of the site in question, the number of species are identified, being characterized according to their greater or lesser risk of extinction, showing for each site only those classified with threat levels (VU,

EN, and CR) All existing species are classified according to the IUCN criteria, which allow the distinction of classes of risk associated with each species, which are presented in Table 1. In the **Glossary** you can also see the definition corresponding to each of the concepts presented in the table.

Table 1 - Risk extinction levels of the species, according to IUCN classification (Adapted from: IUCN 2014b).

LC	NT	VU	EN	CR	EW	EX
<i>Least Concern</i>	<i>Near Threatened</i>	<i>Vulnerable</i>	<i>Endangered</i>	<i>Critically Endangered</i>	<i>Extinct in the Wild</i>	<i>Extinct</i>
Low risk		Threatened				

In the second format, a synthesis of the results associated with each site according to the areas of activity of Galp is presented:

- Biofuels
- Exploration & Production blocks (E&P)
- Gas and Power (G&P)
- Renewables & New Businesses
- Storage Facilities & Terminals
- Refining

In addition to this synthesis by area of activity, there is one last category that encompasses the entire universe of Galp, showing the summary of 65 sites analysed throughout the document. Annex II presents a detailed table with areas of high interest for biodiversity and in Annex III the number of endangered species covered for each of the sites in question.

In this study, we do not present the species characterized with the low risk associated with our sites, namely Least concern and Near Threatened under the IUCN classifications.

### 3.2 Limitations

The main limitations applicable to the analyses carried out in this study, based on information collected in IBAT, were as follows:

- The information provided by the IBAT tool is a result of the monitoring and more recent studies carried out on a global scale, but it does not express the interactions present inter and intra-species, population, or ecosystem;

- The available information on marine ecosystems is still limited, whereby it is not possible to express it in this study, decreasing the perception of the impact that the E&P offshore blocks could have on this environment;
- The geographical coordinates used to locate the E&P blocks correspond to the centre of the block's polygon. Given the enormous extent sometimes reached by these fields, the identification of protected and conservation areas of biodiversity where these are included may be missing, thereby serving only as a source of reference information;
- The 5 km radius presented in the study may sometimes lack the desired accuracy, since this analysis is done manually, unlike the radius of 50 km, which is a specific instrument of IBAT;
- The IBAT tool does not identify the name of the species under IUCN classification;
- The impact arising from the location of the activity concerning the proximity of areas of high biodiversity interest is not reflected in this study.

## 4. Galp's site assessment

### 4.1 Background

In this chapter, the results obtained from the application of the IBAT tool are presented and include 65 Galp sites representing the totality of the Company's sites, whether owned or holding a stake in 2020. As mentioned, the analysis of the areas covered by Galp sites in areas of high biodiversity interest is presented in two different formats: by countries (chapter 4.2.) and by activities (chapter 4.3.).

In addition to the information presented in this chapter, you can see in Annex II a detailed table with the areas of high biodiversity interest and in Annex III the number of endangered species included in each of the sites in question.

**Note:** This approach is not a substitute for the more detailed analysis of the risks and impacts associated with areas of high importance for biodiversity and species with a level of risk of extinction, in the surroundings of Galp sites.

### 4.2 Country assessment

In this subchapter, results are presented according to the country in which the sites are present.

The countries are as follows:

- Portugal
- Spain
- Brazil
- Cape Verde
- S. Tome and Principe
- Guinea-Bissau
- Angola
- Mozambique and Eswatini
- Namibia
- East Timor

With this subchapter, we intend to offer a vision focused on the analysis of Galp's sites by country. The radius of analysis is: in situ, within a radius of 5 km, and within a radius of 50 km.

For a more detailed analysis of the 85 Galp sites, you should consult the activity approach (chapter 4.3.), or the tables in Annex II and Annex III, with the information on the areas of high importance and number of endangered species.

#### **4.2.1 Portugal**

The facilities covered in this report, for Portugal, are scattered across various activities and were divided into five regions, depending on their location, due to the high number of facilities:

- Northern region,
- Centre,
- South,
- Azores, and
- Madeira.

Portugal is the country that covers a greater number of areas of biodiversity importance, due to a large number of sites located in this country and because the majority is located in the onshore territory.

##### **Northern Region**

The northern region of Mainland Portugal, represented in Figure 2, covers the areas of the Matosinhos refinery, Leixões Terminal, Viana do Castelo Terminal, Parque Vale Grande and Ventinveste.

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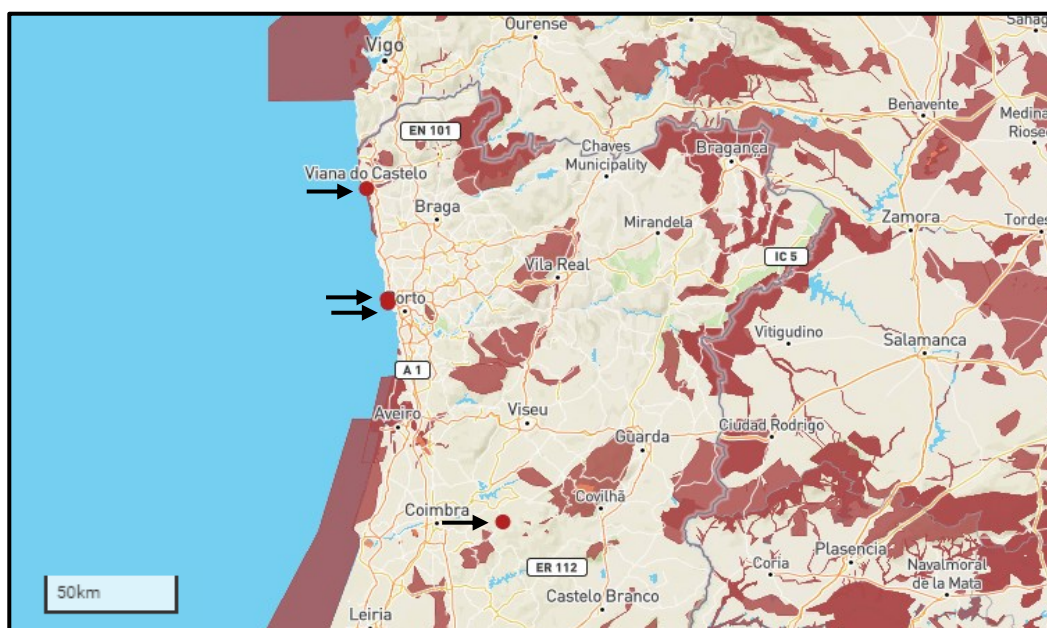


Figure 2 - Location of the Galp sites in the north region of Mainland Portugal vs Natura 2000 Network (Source: IBAT, 2020).

All facilities have a relevant group of biodiversity interest areas with a radius of 5 km and 50 km. The surrounding area within a 50 km radius covers a total of 94 areas of high interest for biodiversity (Table 2), including two IUCN Protected Areas category II (Peneda-Gerês, and Monte Aloia).

Table 2 - Number of Classified areas covered by Galp sites in the north region of Mainland Portugal (Source: IBAT, 2020).

Classified areas	<i>In situ</i>	5 km	50 km
<b>IUCN Protected Area</b>	0	1	26
<b>Key Biodiversity Areas</b>	0	0	14
<b>Natura 2000 network</b>	0	3	48
<b>Ramsar</b>	0	0	6
<b>Total</b>	<b>0</b>	<b>4</b>	<b>94</b>

## Central Region

The central region of Mainland Portugal, represented in Figure 3, covers two sites of G&P activity (Agroger and Carriço Cogeneration). According to the analysis, none of the listed sites is located in areas of high biodiversity interest.

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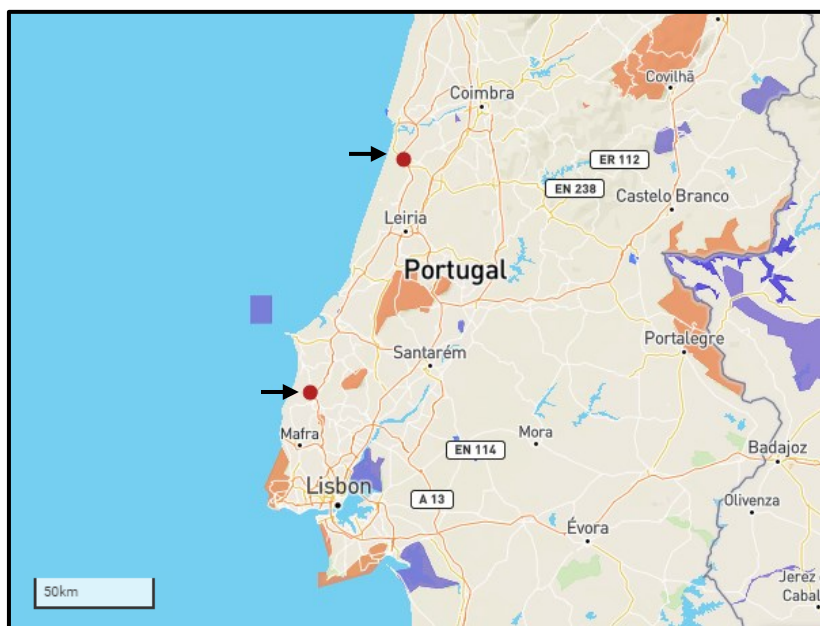


Figure 3- Location of the Galp sites in the central region of Mainland Portugal vs IUCN Protected Areas (Source: IBAT, 2020).

When analysing the surroundings of Agroger and Carriço cogeneration, we see that within a radius of 5 km there is one Natura 2000 network areas. In a broader analysis, with a radius of 50 km, there are 45 classified areas. Carriço Cogeneration includes three areas with IUCN classification, Cabo Mondego, Paul De Arzila and Serras De Aire E Candeeiros (Table 3).

Table 3 - Number of Classified areas covered by Galp sites in the central region of Mainland Portugal (Source: IBAT, 2020).

Classified areas	<i>In situ</i>	5 km	50 km
<b>IUCN Protected Area</b>	0	0	10
<b>Key Biodiversity Areas</b>	0	0	8
<b>Natura 2000 network</b>	0	1	21
<b>Ramsar</b>	0	0	6
<b>Total</b>	<b>0</b>	<b>1</b>	<b>45</b>

## Southern region

In the southern region of Mainland Portugal, there are 7 Galp sites from different areas of activity: Enerfuel – Biofuels; Sines Refinery – Refining; Sigás, Parque de Bancas de Sines, Sines Terminal, Mitrena Park – Storage facilities and Terminals; ParkAlgar – G&P (Figure 4).



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From the analysis conducted to these 7 sites we found that the Mitrena Park and ParkAlgar are located in areas of importance for biodiversity, which are presented in more detail below. The Mitrena Park is located in one Key Biodiversity Area and one Natura 2000 network, the Sado estuary. By analysing the area around the facility, you can see that the Sado estuary acquires greater prominence with other classifications of areas of interest for biodiversity, such as IUCN Protected Area and Ramsar. The ParkAlgar is located in one Key Biodiversity Area, the Serra de Monchique.

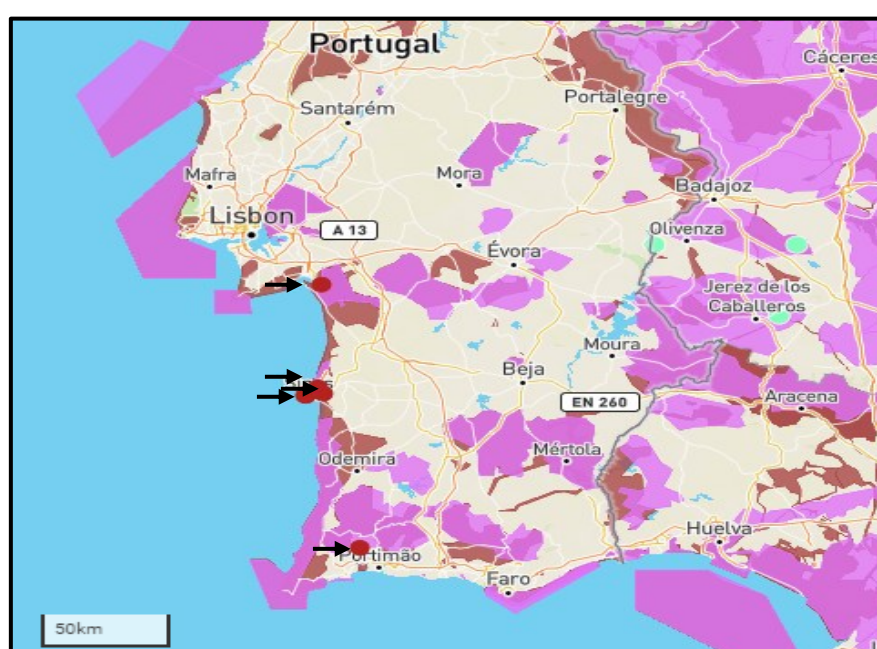


Figure 4 - Location of the Galp sites in the southern region of Mainland Portugal vs Key Biodiversity Areas (pink) and Natura 2000 network (red) (Source: IBAT, 2020).

When analysing the surroundings, we see that within a radius of 5 km all facilities interact with at least one area of high interest for biodiversity. In a broader analysis, with a radius of 50 km, there are several classified areas, including IUCN Protected Areas (Table 4).

Table 4 - Number of Classified areas covered by Galp sites in the southern region of Mainland Portugal (Source: IBAT, 2020).

Classified areas	<i>In situ</i>	5 km	50 km
<b>IUCN Protected Area</b>	0	3	14
<b>Key Biodiversity Areas</b>	2	3	22
<b>Natura 2000 network</b>	1	5	36
<b>Ramsar</b>	0	2	8
<b>Total</b>	<b>3</b>	<b>13</b>	<b>80</b>

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## Azores Archipelago

In this region of Portugal, rich in areas of high importance for biodiversity, there are essentially fuel storage parks, which are spread across several Islands: Flores, Horta, Praia da Vitória and S. Miguel. According to the analysis, none of the listed sites is located in areas of high biodiversity interest.

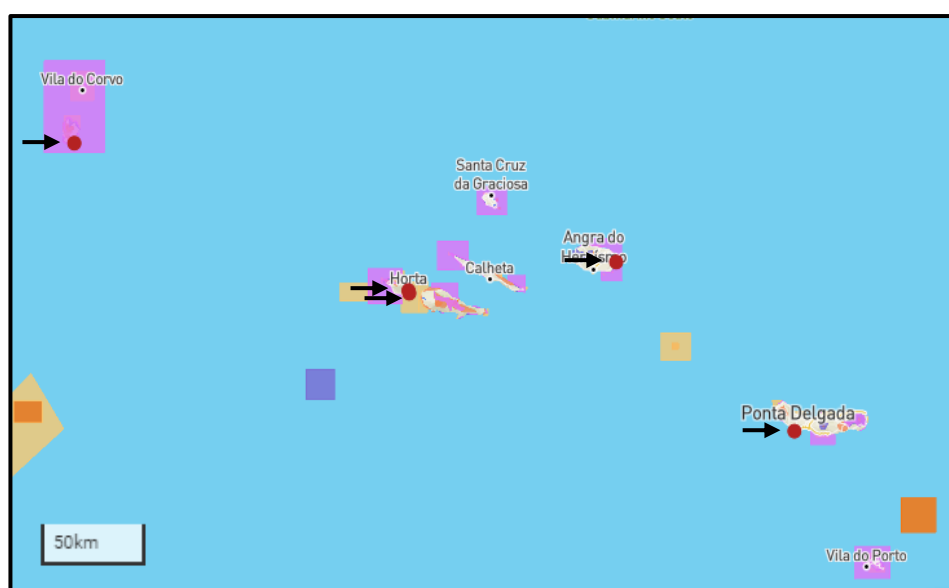


Figure 5 - Location of the Galp sites in Azores Archipelago vs Key Biodiversity Areas (pink) and IUCN Protected Areas (Source: IBAT, 2020).

Analysing the surrounding area of the facility (5km), all facilities interact with at least one area of high interest for biodiversity. In a broader analysis, with a radius of 50 km, there are several classified areas, including IUCN Protected Areas (Table 5).

Table 5 - Number of Classified areas covered by Galp sites in the Azores Archipelago (Source: IBAT, 2020).

Classified areas	<i>In situ</i>	5 km	50 km
<b>IUCN Protected Area</b>	0	8	90
<b>Key Biodiversity Areas</b>	0	3	37
<b>Natura 2000 network</b>	0	4	26
<b>Ramsar</b>	0	2	12
<b>Total</b>	<b>0</b>	<b>17</b>	<b>165</b>



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## Madeira Archipelago

On the Madeira Island, Galp holds the operation of the CLCM storage facility, which is located within the limits of an area of high importance for biodiversity: the Madeira Natural Park, classified as an IUCN Protected Area, category VI (Figure 6).

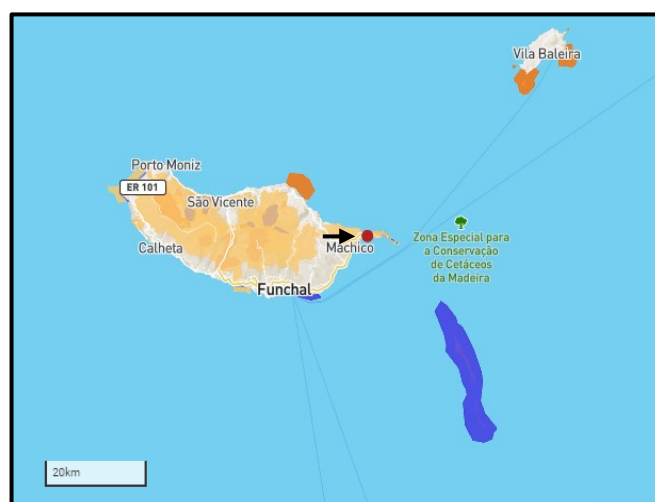


Figure 6 - Location of CLCM in Madeira Archipelago vs IUCN Protected Areas (Source: IBAT, 2020).

When analysing the area near the facility (5 km), we see it extends to: two IUCN Protected Areas, one Key Area of Biodiversity, four Natura 2000 network and one UNESCO World Heritage site, as noted in Figure 7.

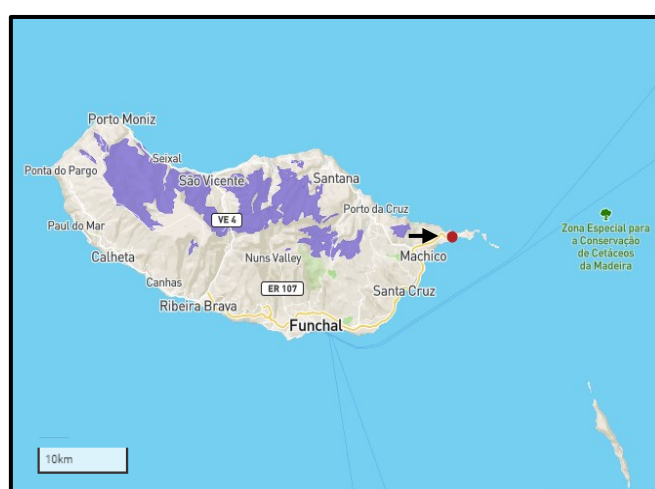


Figure 7 - Location of CLCM in Madeira Archipelago vs UNESCO World Heritage (Source: IBAT, 2020).

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In a broader analysis (50 km), the area covers a larger number of high biodiversity interest areas, including IUCN Protected Areas (Table 6).

Table 6 - Number of Classified areas covered by Galp sites in the Madeira Archipelago (Source: IBAT, 2020).

Classified areas	<i>In situ</i>	5 km	50 km
<b>IUCN Protected Area</b>	1	2	45
<b>Key Biodiversity Areas</b>	0	1	9
<b>Natura 2000 network</b>	0	4	21
<b>Ramsar</b>	0	0	0
<b>World Heritage</b>	0	1	1
<b>Total</b>	<b>1</b>	<b>8</b>	<b>76</b>

#### 4.2.2 Spain

In Spain, three fuel storage facilities were analysed, in Gijón, Merida and Valencia, as presented in Figure 8. The analysis revealed that none of these sites is located (in situ) in areas of high biodiversity interest.

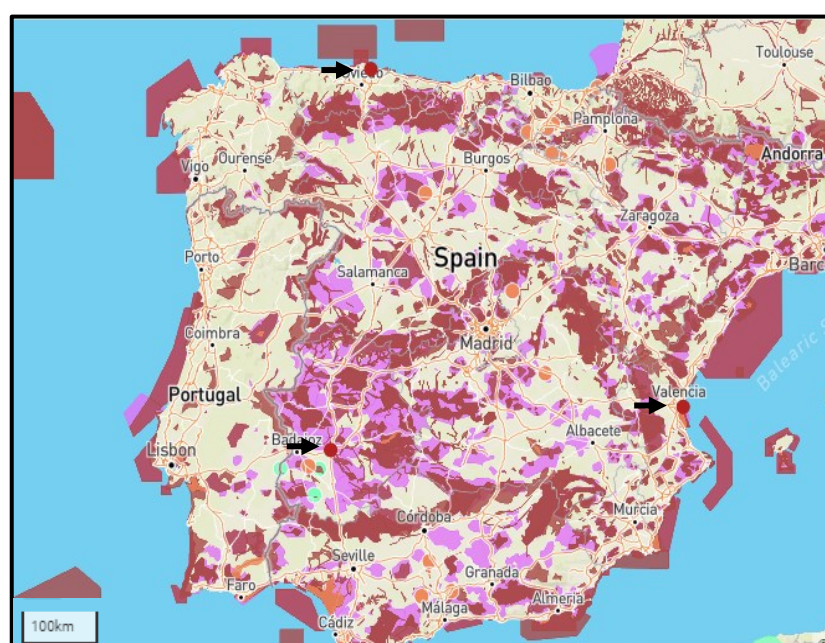


Figure 8 - Location of the Galp's storage facilities in Spain vs Natura 2000 network (red), Ramsar (orange), and Key Biodiversity Areas (pink) (Source: IBAT, 2020).

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Mérida's storage facility reaches, in a radius of 5 km, 3 Key Areas of Biodiversity, and 2 Natura 2000 network. Within a radius of 50 km, a larger number of areas of high biodiversity interest are covered in addition to those listed previously, including IUCN Protected areas, Key Biodiversity Areas, Natura 2000 network, and Ramsar area.

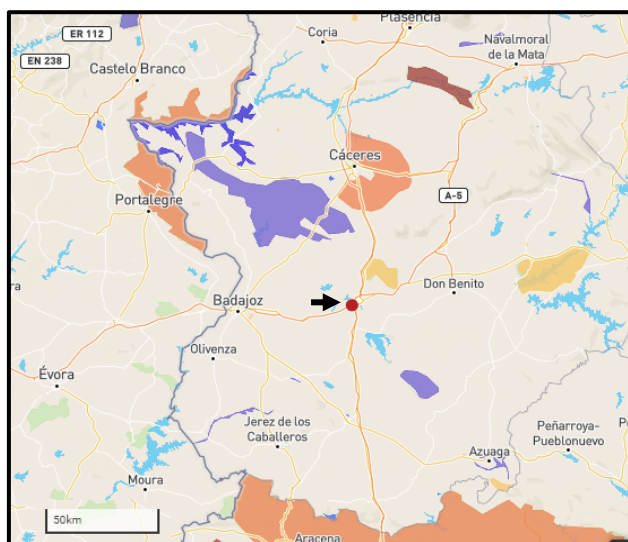


Figure 9 - Location of the Mérida facility vs IUCN Protected Areas (Source: IBAT, 2020).

As regards the analysis of the surrounding area of the Gijón storage facility, within a radius of 5 km, it has been identified a Key Areas of Biodiversity. Within a radius of 50 km, it covers IUCN Protected Areas, Key Biodiversity Areas, Natura 2000 network and Ramsar.

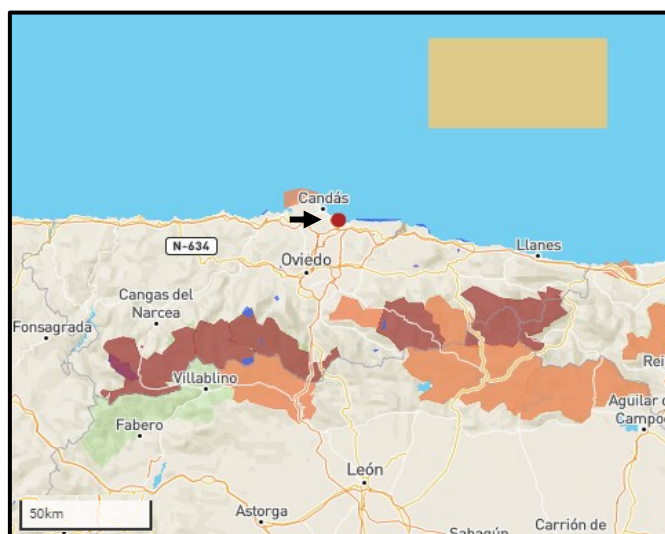


Figure 10 - Location of the Gijon facility vs IUCN Protected Areas (Source: IBAT, 2020).

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In an analysis of the surrounding area the Valencia storage facility, within a radius of 5 km there is one area classified as IUCN Protected Area, one Key Area of Biodiversity, one Ramsar and one Natura 2000 network. Within a radius of 50 km, there are several IUCN Protected Areas, Key Biodiversity Area, Natura 2000 network, and Ramsar areas.

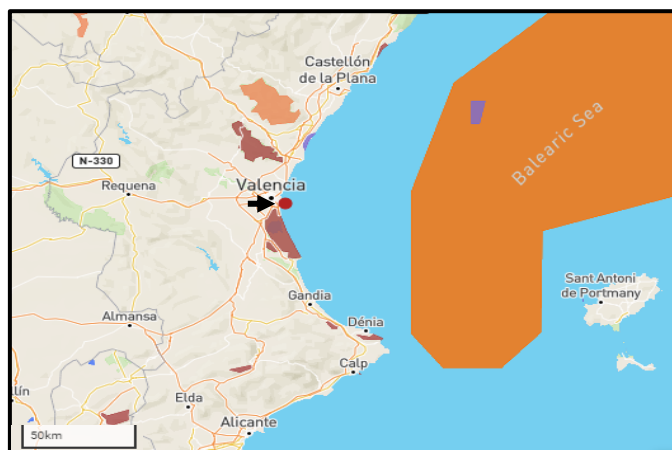


Figure 11 - Location of the Valencia facility vs IUCN Protected Areas (Source: IBAT, 2020).

Besides the storage facilities, in Spain there are 19 renewable energy production sites (solar) concentrated in two main regions (Figure 12). According to the analysis, none of these listed sites are located in areas of high biodiversity interest.

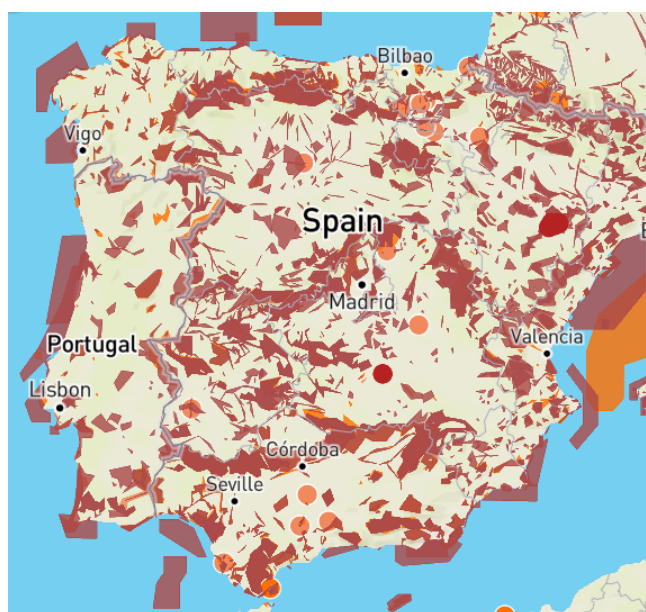


Figure 12 - Location of the renewable energy production sites vs high biodiversity interest areas (Source: IBAT, 2020).

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In an analysis of the surrounding area 13 of the 19 sites, within a radius of 5 km, cover IUCN Protected Areas, Ramsar and Natura 2000 areas. Within a radius of 50 km, there are several IUCN Protected Areas, Key Biodiversity Area, Natura 2000 network, and Ramsar areas that surround all solar sites.

Table 7 - Number of Classified areas covered by Galp sites in Spain (Source: IBAT, 2020).

Classified areas	<i>In situ</i>	5 km	50 km
<b>IUCN Protected Area</b>	0	2	152
<b>Key Biodiversity Areas</b>	0	5	76
<b>Natura 2000 network</b>	0	5	235
<b>Ramsar</b>	0	2	15
<b>Total</b>	<b>0</b>	<b>14</b>	<b>478</b>

### 4.2.3 Brazil

The analysis of the results to Galp sites in Brazil is presented in two types of distinct activities: Palm crop plantations for obtaining biofuels (2) and blocks for Exploration and Production of hydrocarbons (21).

The E&P blocks basins are: Barreirinhas (offshore), Pernambuco (offshore), Pontiguar (offshore and onshore), Santos (offshore), Campos (offshore) e Sergipe Alagoas (onshore) (Galp, 2020).

In summary in Brazil, 6 of the 23 Galp sites cover areas of high importance for biodiversity, most within a radius of 50 km.

### Biofuels - Plantations of palm crops

The location of the two palm crop plantations, in Brazil, called Tailândia/Pará and Tomé-açu/Pará, are located south of Belém (Figure 13). These sites are not located in or near areas (5 km) of high biodiversity interest.

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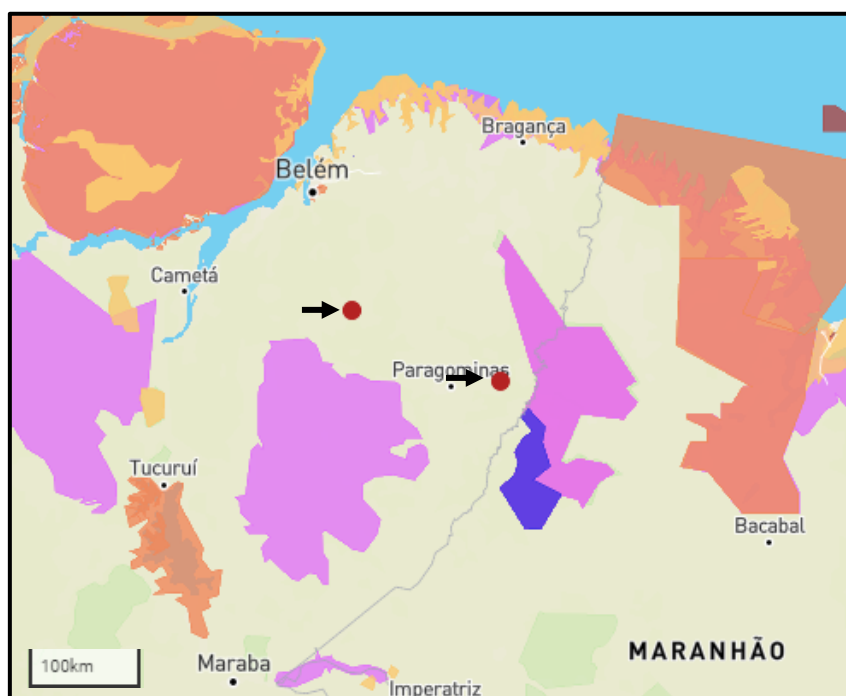


Figure 13 - Location of the plantations of palm crops of Galp in Brazil vs Key Biodiversity Areas (pink) and IUCN Protected Areas (Source: IBAT, 2020).

In the analysis of the area surrounding the crop plantations for biofuel production, within a 50 km radius, there are Key Areas of Biodiversity and an IUCN Protected Area (Table 8).

Table 8- Number of Classified areas covered by Galp sites in Brazil, Biofuels - Plantations of palm crops (Source: IBAT, 2020).

Classified areas	<i>In situ</i>	5 km	50 km
<b>IUCN Protected Area</b>	0	0	1
<b>Key Biodiversity Areas</b>	0	0	3
<b>Ramsar</b>	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>4</b>

## E&P - Barreirinhas, Pernambuco, Santos, and Campos basins

In the Barreirinhas basin, closed to São Luiz there are four offshore blocks called BAR-M-300, BAR-M-342, BAR-M-344 e BAR-M-388. In the Pernambuco basin, located at south of Recife, there are offshore blocks BM-PEPB-783 and BP-PEPB-839. In the Santos basin, located on the south coast of Brazil, Galp is present in seven offshore blocks. In the Campos basin there is

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the offshore E&P block Campos block 791. None of the blocks of these four basins are in or near areas (5 km and 50 km) of high biodiversity interest.

### E&P - Potiguar basin

The Potiguar basin, located at south of Fortaleza, is constituted by offshore and onshore E&P blocks. The five offshore blocks are the BM-POT-16 constituted by POT-M-663/760, and the BM-POT-17 constituted by POT-M-665/853/855. The Sanhaçu field is constituted by the remaining three onshore blocks POT-T-436/479/480.

From the in-situ analysis, none of the blocks of the Potiguar basin lies within the boundaries of areas of high biodiversity interest (Figure 14).

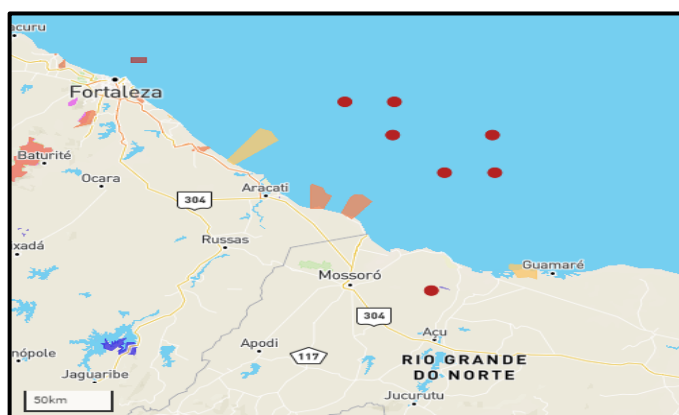


Figure 14 - Location of the Potiguar basin in Brazil vs IUCN Protected Areas (Source: IBAT, 2020).

However, in an analysis of the surrounding area, of the offshore blocks, only block POT-M-663 covers - within a radius of 50 km – an IUCN Protected Area.

As for the analysis of the surroundings of the onshore block the Field Sanhaçu, is near an IUCN Protected Area within a 5 km and 50 km radius.

### E&P - Sergipe Alagoas basin

The Sergipe Alagoas basin includes the onshore E&P block SEAL-T-412/429, the Rabo Branco Field. This block does not lie on any areas of high biodiversity interest. However, it covers within a 50 km radius, IUCN Protected Area and key biodiversity areas (Figure 155).



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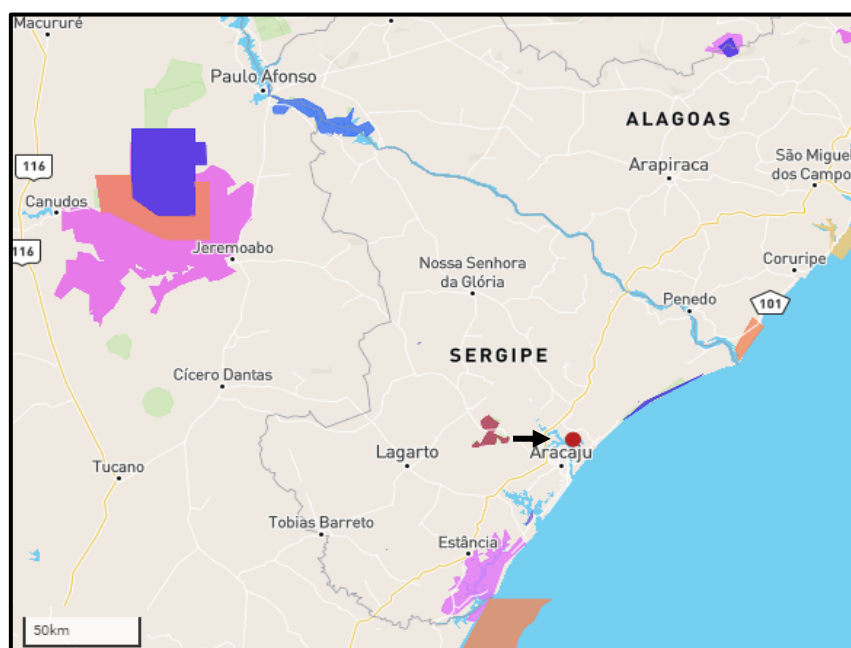


Figure 15 - Location of the Sergipe Alagoas basin in Brazil vs Key Biodiversity Areas (pink) and IUCN Protected Areas (Source: IBAT, 2020).

Table 9 - Number of Classified areas covered by Galp sites in Brazil, E&P basin (Source: IBAT, 2020).

Classified areas	<i>In situ</i>	5 km	50 km
<b>IUCN Protected Area</b>	0	1	17
<b>Key Biodiversity Areas</b>	0	0	2
<b>Ramsar</b>	0	0	0
<b>Total</b>	<b>0</b>	<b>1</b>	<b>19</b>

#### 4.2.4 Cape Verde

In the Archipelago of Cape Verde, three fuel storage parks scattered throughout the islands of São Vicente, Sal and Santiago are analysed, as presented in Figure 166. According to the analysis of the sites, it was concluded that none of the parks located in Cape Verde are located within the boundaries of areas of high biodiversity interest.



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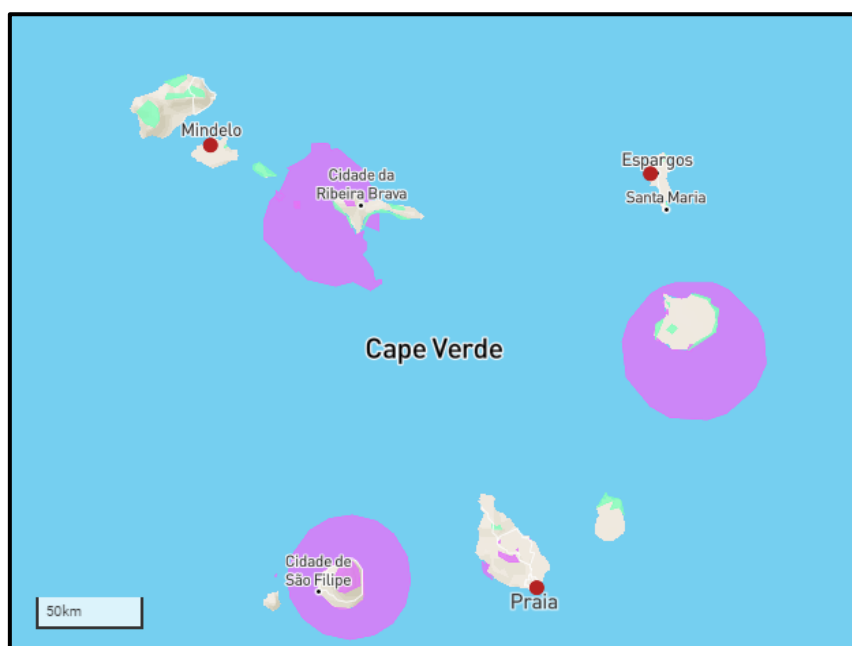


Figure 16 - Location of the Galp sites in Cape Verde vs Key Biodiversity areas (Source: IBAT, 2020).

The storage facility on the Sal Island doesn't cover a Key Area of Biodiversity, within a radius of 5 or 50 km. The storage facilities on the island of São Vicente covers key biodiversity areas within a radius of 50 km. The storage facility on the Santiago Island covers, within a radius of 50 km, areas classified as Key Areas of Biodiversity as well as Ramsar areas.

Table 10 - Number of Classified areas covered by Galp sites in Cape Verde (Source: IBAT, 2020).

Classified areas	<i>In situ</i>	5 km	50 km
<b>IUCN Protected Area</b>	0	0	0
<b>Key Biodiversity Areas</b>	0	0	9
<b>Ramsar</b>	0	0	2
<b>Total</b>	<b>0</b>	<b>0</b>	<b>11</b>

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#### 4.2.5 S. Tome and Principe

Galp has three E&P blocks (offshore) located in S. Tome and Principe, more precisely, between S. Tome and Principe Island and the continental coast of Africa (Gabon and Equatorial Guinea). The analysis made allow to conclude that these sites do not include or are near (5 km and 50 km) any area of high interest for biodiversity, as verified in Figure 17.

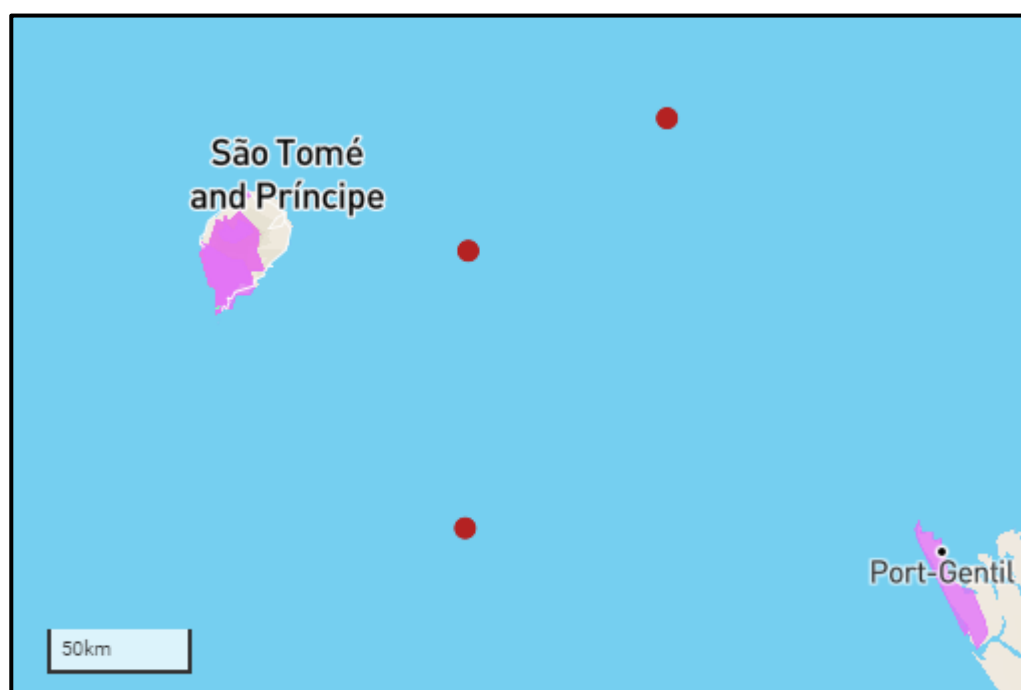


Figure 17 - Location of Galp site near (Sao Tome and Principe vs Areas of high importance for the biodiversity (Source: IBAT, 2020).

Table 11- Number of Classified areas covered by Galp sites in S. Tome and Principe (Source: IBAT, 2020).

Classified areas	<i>In situ</i>	5 km	50 km
<b>IUCN Protected Area</b>	0	0	0
<b>Key Biodiversity Areas</b>	0	0	0
<b>Ramsar</b>	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>

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## 4.2.6 Guinea-Bissau

In Guinea-Bissau, three fuel storage facilities were analysed, in the central part of the country's coast, as presented in Figure 18. The analysis reveals that none of these sites are located in areas of high biodiversity interest.

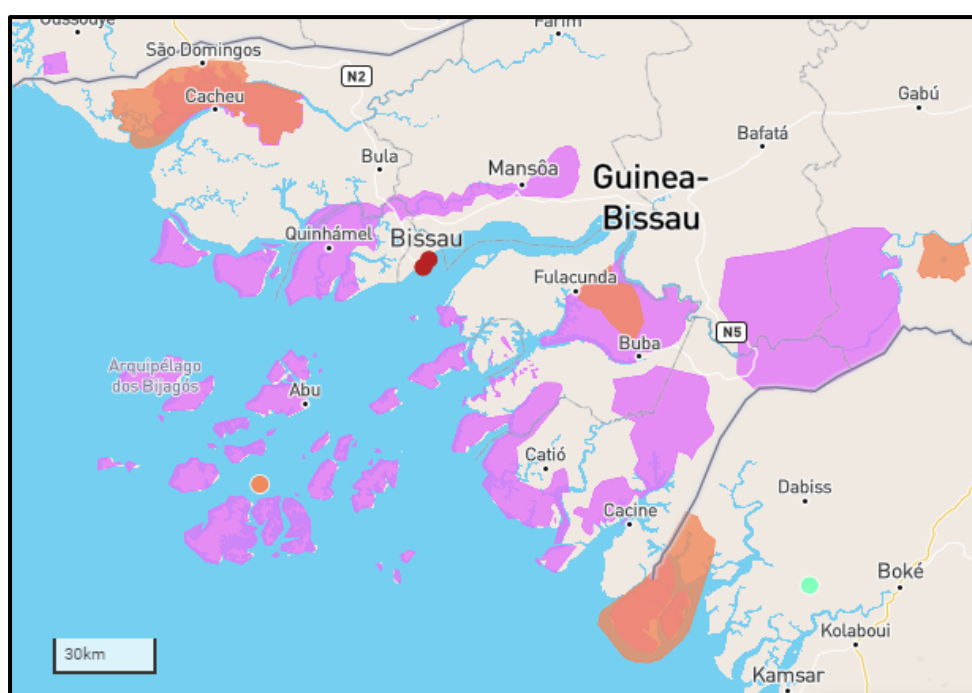


Figure 18 - Location of the Galp sites in Guinea-Bissau vs Key Biodiversity Areas (Pink) and Ramsar (Orange)  
(Source: IBAT, 2020).

However, when analysing the surrounding areas of the storage facilities, within a radius of 5 km, it was identified a Key Area of Biodiversity. In the more distant surroundings, within a radius of 50 km, there were identified other Ramsar and Key Biodiversity Areas (Table 12).

Table 12 - Number of Classified areas covered by Galp sites in Guinea-Bissau (Source: IBAT, 2020).

Classified areas	<i>In situ</i>	5 km	50 km
IUCN Protected Area	0	0	0
Key Biodiversity Areas	0	1	6
Ramsar	0	0	2
<b>Total</b>	<b>0</b>	<b>1</b>	<b>8</b>

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### 4.2.7 Angola

In Angola three E&P offshore blocks are analysed (block 14K-A-IMI, block 14 and block 32), of the North coast of the country, as shown in Figure 19. These sites are not located in or near (5 km and 50 km radius) areas of high biodiversity interest.

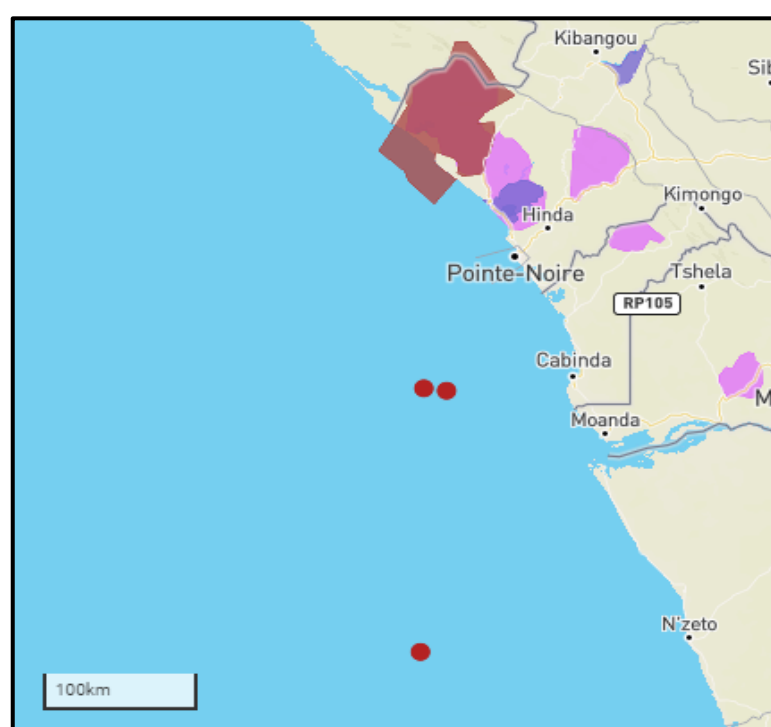


Figure 19 - Location of Galp sites in north of Angola vs Areas of high importance for the biodiversity (Source: IBAT, 2020).

Table 13 - Number of Classified areas covered by Galp sites in Angola (Source: IBAT, 2020).

Classified areas	<i>In situ</i>	5 km	50 km
IUCN Protected Area	0	0	0
Key Biodiversity Areas	0	0	0
Ramsar	0	0	0
Total	0	0	0

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#### 4.2.8 Mozambique

In Mozambique, Galp has activity in two storage facilities, Matola and Beira facilities, and an E&P block, called Rovuma Area 4 (North) with an associated LNG plant, as shown in the Figure 20. Given the proximity, we additionally present the activity of Galp in Eswatini, consisting of the Matsapha fuel storage facility. The analysis shows that none of these sites are located in areas of high biodiversity interest.

The Beira facility covers a high importance (IUCN Protected Area) within a 50 km radius of analysis. The LNG Plant associated to project of Rovuma area 4 block include, in a radius of analysis of 50 km, an area of importance for biodiversity, namely an area classified as IUCN Protected Area and Key Biodiversity Area (Figure 20).

Particularly regarding the Rovuma Area 4 block, no area of high importance for biodiversity has been identified in the vicinity.

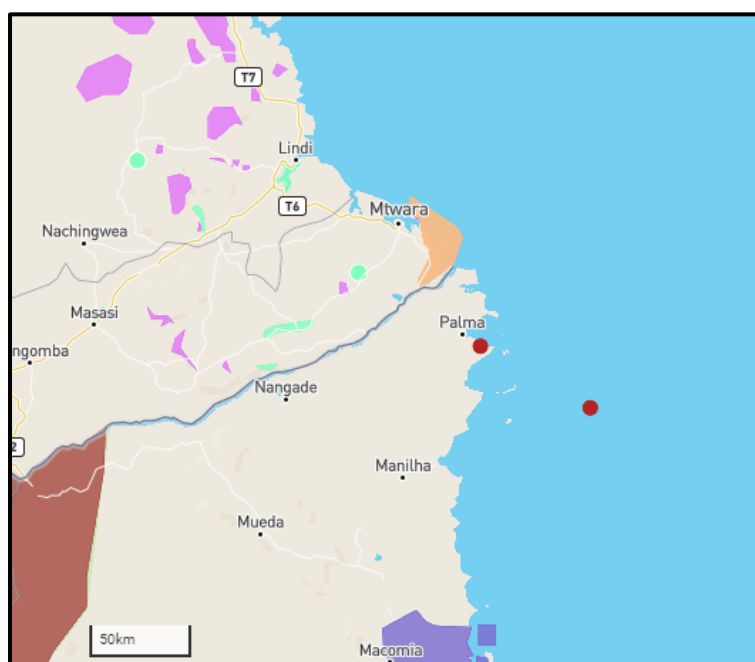


Figure 20 - Surrounding area of the LNG Plant and block Rovuma area 4, in Mozambique (Source: IBAT, 2020).

Analysing in more detail the surrounding storage facilities located south of Mozambique and Eswatini (Figure 21), we see that the Matola facility doesn't cover, in a radius of 5 km, any

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Key Biodiversity Area. In a radius of 50 km it covers IUCN Protected Areas as well as Key Biodiversity Areas.

When analysing the Matsapha park in Eswatini, in a radius of 50 km, it covers IUCN Protected Areas, Key Biodiversity Areas, and a Ramsar area.

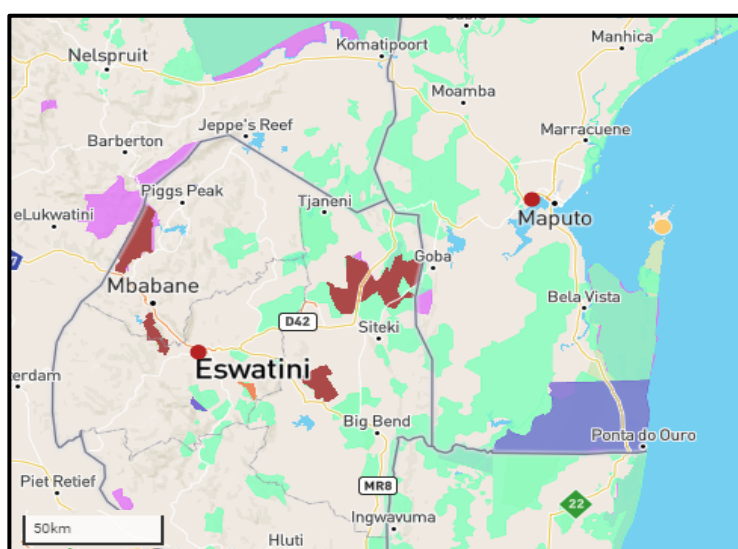


Figure 21 - Surrounding area of the Fuel Storage facility of Matsapha and Matola facility (Source: IBAT, 2020).

Table 12- Number of Classified areas covered by Galp sites in Mozambique (Source: IBAT, 2020).

Classified areas	<i>In situ</i>	5 km	50 km
<b>IUCN Protected Area</b>	0	0	2
<b>Key Biodiversity Areas</b>	0	0	3
<b>Ramsar</b>	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>5</b>

Table 13 - Number of Classified areas covered by Galp sites in Eswatini (Source: IBAT, 2020).

Classified areas	<i>In situ</i>	5 km	50 km
<b>IUCN Protected Area</b>	0	0	6
<b>Key Biodiversity Areas</b>	0	0	1
<b>Ramsar</b>	0	0	1
<b>Total</b>	<b>0</b>	<b>0</b>	<b>8</b>

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### 4.2.9 Namibia

In Namibia, Galp holds a stake in two E&P blocks, PEL 82 and PEL 83. Given the analysis performed, the site is not located in or near (5 and 50 km) any area characterized as high interest for biodiversity (Figure 22).

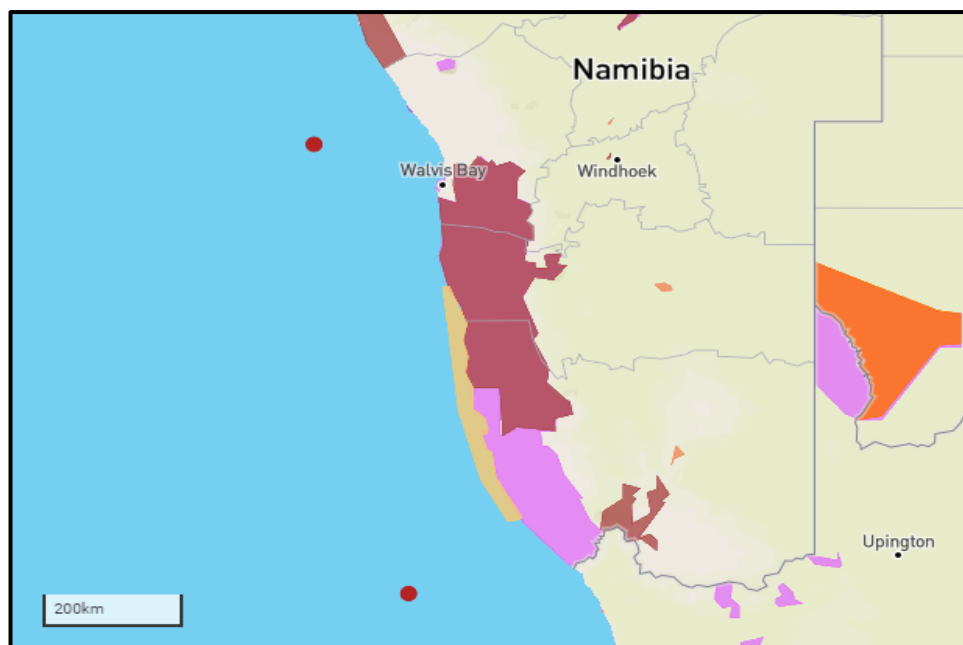


Figure 22 - Location of the Galp sites in Namibia vs Areas of high importance for the biodiversity (Source: IBAT, 2020).

Table 14 - Number of Classified areas covered by Galp sites in Namibia (Source: IBAT, 2020).

Classified areas	<i>In situ</i>	5 km	50 km
<b>IUCN Protected Area</b>	0	0	0
<b>Key Biodiversity Areas</b>	0	0	0
<b>Ramsar</b>	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>

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#### 4.2.10 East Timor

At the South of East Timor, Galp holds a stake in block E (offshore), located in the Timor Sea. The analysis states that the site does not include or is near any area of high interest for biodiversity, as verified in Figure 23.

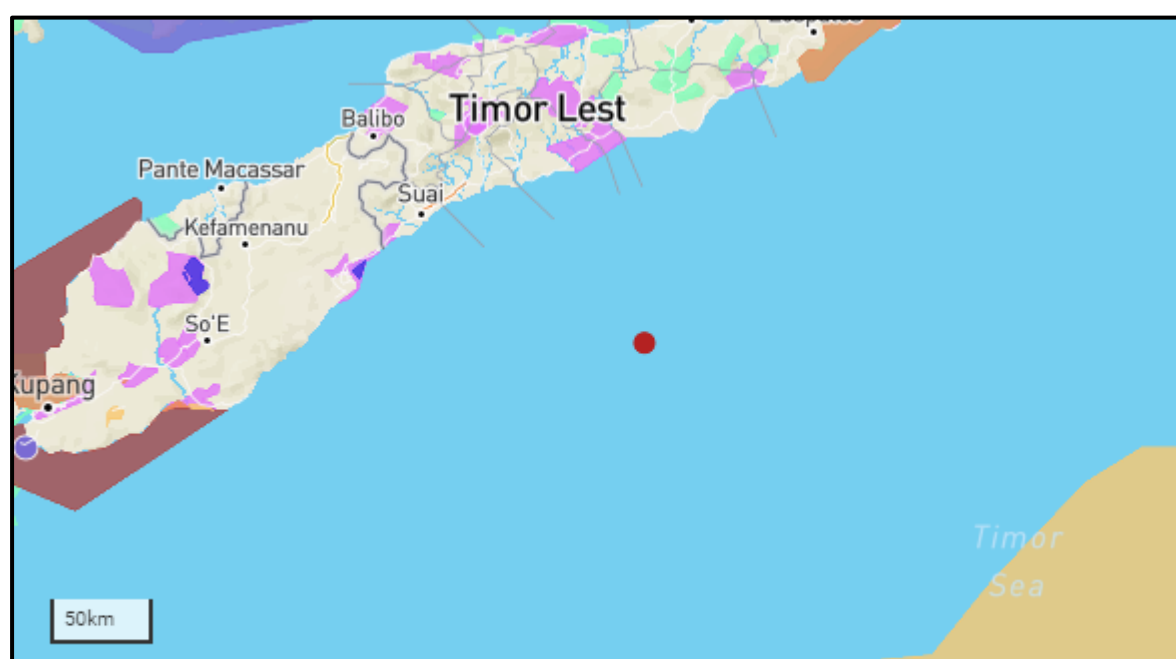


Figure 23 - Location of Galp site at the South of East Timor (Southeast Asia) vs Areas of high importance for the biodiversity (Source: IBAT, 2020).

Table 15 - Number of Classified areas covered by Galp sites in East Timor (Source: IBAT, 2020).

Classified areas	<i>In situ</i>	5 km	50 km
<b>IUCN Protected Area</b>	0	0	0
<b>Key Biodiversity Areas</b>	0	0	0
<b>Ramsar</b>	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>



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## 5. Analysis per activity

In this subchapter the results are presented according to the area of activity to which they are related. The areas of activity are grouped as follows:

- Biofuels
- Exploration & Production blocks
- Gas and Power (Cogeneration Unit)
- Renewables & New Businesses
- Storage Facilities & Terminals
- Refining

With this analysis we intend to offer a vision focused on the area of activity of the business unit. The methodology used is the same as the one presented earlier, with the same radius of analysis (in situ, within 5 km and within 50 km) for both the areas of high importance for biodiversity and the species that nest in them (50 Km).

For a more detailed analysis of the 85 Galp sites, please consult the country-by-country approach (chapter 4.2.), with the maps and detailed descriptions, or the tables in Annex II and Annex III, with the information on the areas of high importance and number endangered species.

Note: This approach is not a substitute for the more detailed analysis of the risks and impacts associated with areas of high importance for biodiversity and species with a level of risk of extinction, in the surroundings of Galp sites.

### 5.2 Biofuels

Within the activity of biofuels, we are analysing the plant for the production of second generation biofuels - Enerfuel (Portugal) - and two fields with crops plantations for the production of biofuels, called Tailândia/Pará and Tomé-açu/Pará (Brazil).

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In Table 19 is presented the summary of the number of areas with high interest for biodiversity covered by the three sites of the Biofuels activity area.

Table 19 - Summary of areas with importance for biodiversity covered depending on the radius of analysis of the Galp site for the Biofuels area (Source: IBAT, 2020).

Classified areas		<i>In situ</i>	5 km	50 km
IUCN protected areas	category Ia	-	-	1
	categories Ib		-	-
	Categories II		-	-
	Categories III		-	-
	category IV		1	2
	category V		1	1
	category VI		-	-
Key Biodiversity Areas		-	1	8
Natura 2000 network			2	9
Ramsar			2	2
Alliance for Zero Extinction (AZE)			-	-
World Heritage			-	-
Total		0	7	23

No site in the biofuels activity is located in areas with high importance for biodiversity.

When analysing the surroundings within a radius of 5 km, only the Enerfuel facility covers areas of importance for biodiversity: IUCN Protected Areas of categories IV and V, one Key Area of Biodiversity, one Natura 2000 network and two Ramsar.

A broader analysis, within a radius of 50 km, reveals that the three sites of Biofuels activity cover areas of high interest for biodiversity, totalling 23 different areas.

Table 20 - Summary of the number of endangered species found within 50 km of each site for the activity of Biofuels. (Source: IBAT, 2020).

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<i>Analysis radius</i>	<i>Vulnerable (VU)</i>	<i>Endangered (EN)</i>	<i>Critically Endangered (CR)</i>	<i>Total</i>
Palma crops (Tailândia/Pará)	20	5	3	28
Palma crops (Tomé-açu/Pará)	20	6	3	29
Enerfuel	63	32	19	114

In terms of species categorized under the IUCN Red List of Threatened Species, it is important to note that 19 species are critically endangered within a radius of 50 km from the Enerfuel site, in Potugal.

### 5.3 Exploration & Production blocks

In the E&P activity, 32 blocks are analysed, which are located in: Angola (3), Brazil (21), Mozambique (2), Namibia (2), East Timor (1) and Sao Tome and Principe (3).

In Table 21 is presented a summary of the number of areas with high interest for biodiversity covered by 32 sites in the E&P area of activity.

Table 21 - Summary of areas with importance for biodiversity covered depending on the radius of analysis of the Galp site for the E&P area (Source: IBAT, 2020).

Classified areas		<i>In situ</i>	5 km	50 km
IUCN protected areas	category Ia	-	-	1
	categories Ib		-	
	Categories II		-	4
	categories III		-	2
	category IV		1	5
	category V		-	1
	category VI		-	3
Key Biodiversity Areas			-	3
Natura 2000 network			-	-
Ramsar			-	-
Alliance for Zero Extinction (AZE)		-	-	
World Heritage		-	-	
Total		0	1	19

No site in the E&P activity is located in areas with high importance for biodiversity.

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In a more distant analysis, within a radius of 50 km, the analysis reveals that 4 of the E&P blocks intersect 19 areas with high interest for biodiversity.

In terms of species categorized under the IUCN Red List of Threatened Species, it is important to note that 164 species are critically endangered within a radius of 50 km from the Block E site, in East Timor (Table 22).

Table 22 - Summary of the number of endangered species found within 50 km of each site for the activity of E&P. (Source: IBAT, 2020).

Sites	Vulnerable (VU)	Endangered (EN)	Critically Endangered (CR)	Total
Campos bl. 791	18	15	4	37
Uirapuru	21	13	5	39
BM-S-8	18	12	3	33
North Bacalhau	21	13	5	39
BM-S-11 A	20	12	5	37
BM-S-11	18	12	3	33
BM-S-24	17	12	3	32
Sepia	18	12	4	34
Rabo Branco Field ( <i>onshore</i> )	46	27	10	83
Field Sanhaçu ( <i>onshore</i> )	36	17	10	63
POT-M-663 (POT-16)	31	17	11	59
POT-M-665 (POT-17)	31	17	10	58
POT-M-760 (POT-16)	31	17	10	58
POT-M-853 (POT-17)	31	17	10	58
POT-M-855 (POT-17)	31	17	10	58
BAR-M-300	26	14	7	47
BAR-M-342	30	16	12	58
BAR-M-344	30	16	12	58
BAR-M-388	30	16	12	58
BM-PEPB-783	33	19	10	62
BM-PEPB-839	33	19	10	62
Block 14K-A-IMI	29	17	8	54
Block 14	29	18	9	56
Block 32	15	13	4	32
LNG Plant (Rovuma)	95	44	14	153
Rovuma Área 4	76	25	9	110
Block PEL 82	16	11	4	31

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Sites	Vulnerable (VU)	Endangered (EN)	Critically Endangered (CR)	Total
Block PEL 83	21	14	5	40
Block E	3	18	164	185
Block 6	25	26	6	57
Block 11	24	16	4	44
Block 12	26	16	4	46

## 5.4 Gas and Power

Two facilities located in Mainland Portugal are analysed In the Gas and Power (G&P) business, which correspond to two Cogeneration Units.

In Table 23 it is presented the number of areas of high interest for biodiversity covered by the four sites of the G&P area of activity.

Table 23 - Summary of areas with importance for biodiversity covered depending on the radius of analysis of the Galp site for the G&P area (Source: IBAT, 2020).

Classified areas		<i>In situ</i>	5 km	50 km
IUCN protected areas	category Ia	-		
	categories Ib			
	Categories II			
	categories III			1
	category IV			4
	category V			5
	category VI			
Key Biodiversity Areas		-		8
Natura 2000 network		-		21
Ramsar			1	6
Alliance for Zero Extinction (AZE)				
World Heritage				
Total		0	1	45

An analysis of the surroundings, within a radius of 5 km, reveals that all G&P facilities include one Ramsar areas. Within a radius of analysis of 50 km, there are 45 areas of

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high interest for biodiversity that are covered, mainly Natura 2000 network and Key Areas of Biodiversity.

In terms of species categorized under the IUCN Red List of Threatened Species, it is important to note that 113 species are at risk of extinction within a radius of 50 km from ParkAlgar, of which 18 are critically endangered (Table 24).

Table 24 - Summary of the number of endangered species found within 50 km of each site for the activity of G&P. (Source: IBAT, 2020).

<i>Sites</i>	<i>Vulnerable (VU)</i>	<i>Endangered (EN)</i>	<i>Critically Endangered (CR)</i>	<i>Total</i>
Cogeneration Unit				
Agroger	62	33	18	113
Carriço Cogeneration	61	27	18	106

## 5.5 Renewables & New Businesses

In the Renewables & New Businesses, 19 facilities located in Spain are analysed and three located in Portugal.

In Table 24 it is presented the number of areas of high interest for biodiversity identified for these facilities in the mentioned locations.

Table 24 - Summary of areas with importance for biodiversity covered depending on the radius of analysis of the Galp site for the Renewables & New Businesses area (Source: IBAT, 2020).

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Classified areas		<i>In situ</i>	5 km	50 km
IUCN protected areas	category Ia	-	-	23
	categories Ib		-	
	Categories II		-	
	categories III		-	
	category IV		1	
	category V		1	
	category VI		-	
Key Biodiversity Areas		1	1	29
Natura 2000 network		-	4	73
Ramsar		-	1	12
Alliance for Zero Extinction (AZE)		-	-	-
World Heritage		-	-	-
Total		1	8	137

An analysis of the surroundings, within a radius of 5 km, reveals that all Renewables & New Businesses facilities include an IUCN Protected Area category IV, Natura 2000 and a Ramsar area. Within a radius of analysis of 50 km, there are 137 areas of high interest for biodiversity that are covered, mainly Natura 2000 network.

In terms of species categorized under the IUCN Red List of Threatened Species, it is important to note that 124 species are at risk of extinction within a radius of 50 km from ParkAlgar, of which 20 are critically endangered (Table 24).

Table 25 - Summary of the number of endangered species found within 50 km of each site for the activity of the Renewable & New Businesses. (Source: IBAT, 2020).

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<i>Sites</i>	<i>Vulnerable (VU)</i>	<i>Endangered (EN)</i>	<i>Critically Endangered (CR)</i>	<i>Total</i>
Renewable & New Businesses				
ParkAlgar	66	38	20	124
Ventinveste	40	13	4	57
Escarnes	45	9	4	58
Envitero	44	9	4	57
Mocatero	43	9	4	56
Escatron Dos	43	9	4	56
Ignis Uno	43	9	4	56
Emocion	43	9	4	56
Mediomonte	43	9	4	56
Palabra	43	10	4	57
Esplendor	41	9	4	54
Hazana	42	9	4	55
Talento	42	9	4	55
El Robledo	44	10	4	58
Sierrezuela	44	10	4	58
Ribagrande	44	10	4	58
Valdelagua	44	10	4	58
Valdivieso	40	16	2	58
Valdecarro	40	16	2	58
Alcazar 1	40	16	2	58
Alcazar 2	40	16	2	58

## 5.6 Storage Facilities & Terminals

The fuel storage parks owned by Galp are spread across several geographies: Portugal (9), Spain (3), Cape Verde (3), Guinea-Bissau (3), Mozambique (2), and Eswatini (1). As for the three Terminals, both are located in Portugal. In total there are 24 facilities within this activity, which are analysed below, according to each scale.

In Table 25 it is presented the summary of the number of areas with high interest for biodiversity covered by the facilities associated with the activity of Storage Facilities and Terminals.



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Table 25 - Summary of areas with importance for biodiversity covered depending on the radius of analysis of the Galp site for the Storage Facilities & Terminals (Source: IBAT, 2020).

Classified areas		<i>In situ</i>	5 km	50 km
IUCN protected areas	category Ia	-	22	339
	categories Ib			
	Categories II			
	categories III			
	category IV			
	category V			
	category VI	1		
Key Biodiversity Areas		1	20	149
Natura 2000 network		1	20	223
Ramsar		-	10	39
Alliance for Zero Extinction (AZE)				
World Heritage			1	1
Total		3	73	751

Two of the 24 Storage Parks and Terminals under analysis are located in areas of importance for biodiversity: the Mitrena facility and CLCM, both located in Portugal.

The Mitrena Park is located in an area classified as a Key Area of Biodiversity and Natura 2000 network, the Sado estuary. CLCM is located in the Natural Park of Madeira, an IUCN Protected Area category VI.

When analysing the surroundings, within a radius of 5 km, we see that 17 facilities cover 84 different areas of high interest for biodiversity. Within a radius of analysis of 50 km, you can see that all 23 facilities intersect with areas of high interest for biodiversity, totalling 751 different areas (Table 29). Also, 17 of these areas are classified under the IUCN protected areas category Ia. The total number of areas classified under the IUCN protected areas is 339.

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In terms of species categorized under the IUCN Red List of Threatened Species, it is important to note that CLCM in Madeira, has the greatest number of species (194) at risk of extinction within a radius of 50 km, of which 49 are critically endangered (Table 26).

Table 26 - Summary of the number of endangered species found within 50 km of each site for the Storage Facilities & Terminals (Source: IBAT, 2020).

<i>Sites</i>	<i>Vulnerable (VU)</i>	<i>Endangered (EN)</i>	<i>Critically Endangered (CR)</i>	<i>Total</i>
Sigás	63	32	19	114
Bancas de Sines	63	32	19	114
Mitrena	63	34	17	114
Horta-CL	48	54	25	127
Horta-GPL	48	54	25	127
Flores-CL	37	39	16	92
Praia da Vitória - Terceira	46	51	13	110
Nordela LPG - S. Miguel	41	50	22	113
CLCM	88	57	49	194
Leixões Terminal	57	30	15	102
Sines Terminal	63	32	19	114
Viana do Castelo Terminal	62	30	17	109
Mérida	35	8	5	48
Gijón	64	24	12	100
Valência	73	31	17	121
S.Vicente-CL&GPL	37	34	12	83
Sal-CL&GPL	34	17	8	59
Santiago-CL&GPL	36	30	5	71
Bolola	46	29	17	92
LPG (GB)	46	29	17	92
CLC (GB)	46	29	17	92
Beira	95	33	13	141
LPG (MZ)	75	42	16	133
Matsapha	23	13	7	43

## 5.6 Refining

The Refining activity covers two refineries, both located in Mainland Portugal (Matosinhos and Sines). In Table 27 it is presented a summary of the number of areas of high interest for biodiversity covered by the two facilities associated with the Refining area of activity.

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Table 27 - Summary of areas with importance for biodiversity covered by Galp sites analysis radius of the Refining area (Source: IBAT, 2020).

Classified areas		<i>In situ</i>	5 km	50 km
IUCN protected areas	category Ia	-		
	categories Ib			
	Categories II			
	categories III			
	category IV		1	5
	category V		1	2
	category VI			
Key Biodiversity Areas		-	1	7
Natura 2000 network			2	15
Ramsar			1	1
Alliance for Zero Extinction (AZE)				
World Heritage				
Total		0	6	30

None of the refineries are located in areas of high importance for biodiversity. However, analysing the surroundings of the facilities, within a radius of 5 km, we see that Sines refinery intersects areas of high interest for biodiversity, including two IUCN Protected Areas of IV and V categories; one Key Biodiversity Area, two Natura 2000, and one Ramsar. Within a radius of 50 km analysis, the two refineries include a total of 30 areas of high interest for biodiversity.

In terms of species categorized under the IUCN Red List of Threatened Species, Sines Refinery showed a total of 115 endangered species, including 19 critically endangered species. Matosinhos Refinery showed a total of 101 endangered species, which of 15 are critically endangered.

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Table 28 - Summary of the number of endangered species found within 50 km of each site for the Refining area (Source: IBAT, 2020).

Sites	Vulnerable (VU)	Endangered (EN)	Critically Endangered (CR)	Total
Sines Refinery	64	32	19	115
Matosinhos Refinery	57	29	15	101

### 3.3.6. Galp overall - by activity

Having analysed 85 Galp sites, we see that 3 are located in areas of high interest for biodiversity: ParkAlgar (G&P), Mitrena and CLCM (storage facilities), covering a total of 4 areas of high interest for biodiversity.

Table 29 - Summary of high important area for the biodiversity covered by the analysis radius of the Galp sites (Source: IBAT, 2020)

Classified areas		<i>In situ</i>	5 km	50 km
IUCN protected areas	category Ia	-	29	399
	categories Ib			
	Categories II			
	categories III			
	category IV			
	category V			
	category VI	1	3	34
Key Biodiversity Areas		2	23	204
Natura 2000 network		1	28	341
Ramsar		-	15	60
Alliance for Zero Extinction (AZE)		-	-	-
World Heritage		-	1	1
Total		4	96	1005

In an analysis of the surroundings of the Galp sites, within a radius of 5 km, it is possible to see that they cover 96 different areas of high interest for biodiversity (Table 29).

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When analysing the more distant surroundings, within a radius of 50 km, you can see that 59 of the Galp sites cover 1005 different areas of high interest for biodiversity. These important areas for biodiversity refer to all categories of classified areas for the biodiversity under analysis.

The Block 5 (East Timor) and CLCM (Portugal) are the facilities with more species categorized under the IUCN Red List of Threatened Species, with a total of 185 and 194 species, respectively. These facilities - Block 5 and CLCM - have the greatest number of critically endangered (CR) species, with 164 and 49 species respectively.

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## 6. Conclusion

Throughout this study 85 Galp sites were analysed in 2021, for the year 2020, in terms of biodiversity. This analysis assessed Galp sites according to their location in relation to areas of high interest for biodiversity, taking into account areas classified according to the global databases, via the IBAT. Through this analysis, it can be concluded that 3 of the 85 Galp sites, equivalent to 3,5%, are located in areas of high importance for biodiversity. These sites are all located in Portugal: ParkAlgar (G&P), Mitrena and CLCM (storage facilities).

Spain is the country that covers the largest number of areas of biodiversity importance, in all radii of analysis (total of 492 areas). This result can be explained by the recent acquisition of the solar power facilities in Spain. As expected, it is followed by Portugal - where a large number of Galp sites are located (20), with the majority located in onshore territory, which covers a total of 240 areas. Considering all the 11 countries, Galp sites cover a total of 1005 areas of high biodiversity interest, including 429 IUCN Protected Areas, 229 Key Biodiversity Areas, 370 Natura 2000 Network, 75 Ramsar areas, and 1 World Heritage area.

Considering the analysis of the sites by type of activity, it can be concluded that Storage Facilities & Terminals cover the largest number of areas of biodiversity importance, in all radii of analysis (in situ: 3; 5 km: 73; e 50 km: 751). However, it is worth noting that this area of activity has a greater number of onshore facilities.

In terms of IUCN species analysis, the Block E (East Timor) and CLCM (Portugal) are the facilities with more species categorized under the IUCN Red List of Threatened Species, with a total of 185 and 195 species, respectively. These facilities have also the largest number of critically endangered (CR) species, with 164 and 49 species respectively.

Regarding the analysis of the surroundings of the sites, within a radius of 5 km, around 43% or 36 of Galp sites, are located in areas of high interest for biodiversity, covering

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about 96 different classified areas. Finally, within 50 km radius from Galp sites, 70% or 37 Galp sites, are located in areas of high interest for biodiversity, covering 1005 important areas.

This analysis allowed the identification of the priority action sites in terms of biodiversity, for Galp, as well as the respective areas and classification of protected species in their vicinity. Note that the analyses in this report are indicative and do not replace the detailed analyses of the state of Biodiversity and environmental impacts developed within the scope of activities of Galp that have been - or will come to be – performed.

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## 8. Glossary

**AZE Areas:** Alliance for Zero Extinction (AZE) are the last existing locations for some of the most endangered species on the planet. AZE areas are distinct areas containing 95% of the known world population of an endangered (EN) or critically endangered species (CR), or that are used in 95% of cases for activities of particular importance for an EN or CR species, for example: reproduction. The loss of an AZE area would result in the extinction of a species in the wild. These areas are effectively the subset of Key Areas of Biodiversity and of Important Bird Areas (IBAs), which absolutely require priority conservation actions. For more information on the classification assigned to the species at risk of extinction, see IUCN Red List of Threatened Species <sup>TM</sup>.

Source: (AZE, 2019)

**Key Areas of Biodiversity:** A priority conservation site for a set of species (not just birds), identified by means of quantitative criteria used for the definition of the IBAs. The IBAs have 4 criteria: presence of threatened species worldwide; significant populations of endemic species or with limited distribution; a representative sample of species typically from a specific biome; important congregation of species. This prioritization model was launched by BirdLifeInternational and has been used by other organizations for defining equally important locations for other groups of species, which culminated with the development of the concept of Key Areas of Biodiversity.

Source: (KBA, 2019)

**Area of high interest for biodiversity:** any area of biodiversity protection or of priority conservation identified in this report, according to the data provided by the IBAT tool (IUCN areas, Key Areas of Biodiversity, AZE, Ramsar, Natura 2000 network and UNESCO World Heritage).

**IUCN protected areas:** protected areas, both marine and terrestrial, classified by the IUCN using a comprehensive set of default categories, based on management objectives. These allow the comparison of areas between countries, unlike national designations (for example, national park or forest reserve), which are not internationally standardized.

The characteristics and objectives of IUCN Protected Areas, for each category, are as follows:

- **Category Ia (Strict Nature Reserve):** Strictly protected areas set aside to protect biodiversity and also possibly geological/geomorphical features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values.

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- **Category Ib (Wilderness Area):** Usually large unmodified or slightly modified areas, retaining their natural character and influence without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition.
- **Category II (National Park):** Large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible, spiritual, scientific, educational, recreational, and visitor opportunities.
- **Category III (Natural Monument or Feature):** Set aside to protect a specific natural monument, which can be a landform, sea mount, submarine cavern, geological feature such as a cave or even a living feature such as an ancient grove. They are generally quite small protected areas and often have high visitor value.
- **Category IV (Protected area for the management of habitats or species):** Aim to protect particular species or habitats and management reflects this priority.
- **Category V (Protected Landscape/ Seascapes):** Protected area where the interaction of people and nature over time has produced an area of distinct character with significant, ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values.
- **Category VI (Protected area with sustainable use of natural resources):** Conserve ecosystems and habitats together with associated cultural values and traditional natural resource management systems.

Source: (IUCN, 2019a)

**Ramsar Areas:** Areas covered by the Convention on Wetlands of International Importance (Ramsar, Iran, 1971), known as the Ramsar Convention. This is an intergovernmental treaty that expresses the commitment of Member States to maintaining the ecological characteristics of Wetlands of International Importance and to promote the sustainable use of wetlands in their territory.

Source: (Ramsar, 2019)

**Natura 2000 network areas:** Natura 2000 network is an ecological network for the community area of the European Union resulting from the implementation of Directives Nr. 79/409/CEE (Birds Directive) and Nr. 92/43/CEE (Habitats Directive) which aims to ensure the long-term conservation of the most endangered species and habitats in Europe,

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contributing to stopping biodiversity loss. It is the main instrument for the conservation of nature in the European Union.

Source: (ICNF, 2019a)

**IUCN Red List of Threatened Species™:** database with species of animals, plants, fungi and protista in risk of extinction, classified according to the following categories: **Least Concern**, **Near Threatened**, **Vulnerable**, **Endangered**, **Critically Endangered**, **Extinct in the Wild** and **Extinct**.

- **Extinct (EX)** – A *taxon* is Extinct when there is no doubt that the last individual has died. A taxon is presumed Extinct when all exhaustive attempts to find an individual in known and potential habitats at appropriate periods (day, season and year), carried out throughout its historical area of distribution, have failed. The surveys should be made for a period of time appropriate to the lifecycle and biological form of the taxon in question.
- **Extinct in the Wild (EW)** – A *taxon* is extinct in the wild when it is classified as surviving only in cultivation, captivity or as a naturalized population (or populations) outside its previous area of distribution. A taxon is presumed extinct in the wild when all exhaustive attempts to find an individual in known and potential habitats at appropriate periods (day, season and year), carried out throughout its historical area of distribution, have failed. The surveys should be made for a period of time appropriate to the lifecycle and biological form of the taxon in question.
- **Critically Endangered (CR)** - A *taxon* is Critically Endangered when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered species, whereby it is considered to be facing an extremely high risk of extinction in nature.
- **Endangered (EN)** - A taxon is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered species, whereby it is considered to be facing a very high risk of extinction in nature.
- **Vulnerable (VU)** - taxon is Vulnerable when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable species, whereby it is considered to be facing a high risk of extinction in the wild.
- **Near Threatened (NT)** – A taxon is Near Threatened when, having been evaluated by the criteria, it does not qualify as Critically Endangered, Endangered or Vulnerable, but is however likely to be categorized as endangered in the near future.

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- **Least Concern (LC)** – A taxon is Least Concern when it has been assessed by the criteria and does not qualify as any of the categories Critically Endangered, Endangered, Vulnerable or Near Threatened. Broad and plentiful rate of distribution are included in this category.

Source: (IUCN, 2019b)

**Wetlands:** characterized by "areas of swamp, pond, peat bog or water, whether natural or artificial, permanent or temporary, with stagnant or running water, fresh, brackish or salt, including marine waters whose depth at low tide does not exceed six metres". These areas may include "riverine or coastal areas adjacent to them, as well as islets or masses of sea water with a depth greater than six metres at low tide, integrated within the bounds of the wetland".

Source: (ICNF, 2019b)

**World Heritage:** designation based on the Convention for the Protection of the World's Cultural and Natural Heritage, adopted in 1972, to encourage the identification, protection and preservation of cultural and natural heritage around the world, including locations recognized by their exceptional value for humanity (Note: the IBAT tool does not cover cultural sites).

Source: (WHC, 2019)



## **ANNEXES**

## ANNEX I –COORDINATES OF THE GALP SITES

Table 30 - Coordinates (latitude and longitude) of the Galp sites.

Site		Country	Latitude (deg min seg)	Longitude (deg min seg)	Latitude (deg.ddd)	Longitude (deg.ddd)
<b>Biofuels</b>						
Palma crops (Tailândia/Pará)		Brazil	-02° 57' 14"S	-46° 57' 00"W	-2.954	-46.95
Palma crops (Tomé-açu/Pará)		Brazil	-02° 23' 31"S	-48° 08' 52"W	-2.392	-48.148
Biofuel plant of 2nd Generation (Enerfuel)		Portugal	37° 59' 40"N	-08° 49' 30"W	37.995	-8.825
<b>Exploration &amp; Production Blocks</b>						
Campos basin	Campos block 791	Brazil	-24° 33' 54"S	-40° 35' 46"W	-24.565	-40.596
	Uirapuru	Brazil	-25° 02' 56"S	-43° 48' 40"W	-25.049	-43.811
	BM-S-8	Brazil	-25° 28' 34"S	-44° 11' 56"W	-25.476	-44.199
	North Carcara	Brazil	25° 20' 9"S	43° 59' 27" W	-25.336	-43.991
Santos basin	BM-S-11 A (Iara)	Brazil	-24° 58' 23"S	-42° 36' 25"W	-24.973	-42.607
	BM-S-11 (Lula & Iracema)	Brazil	-25° 27' 40"S	-42° 49' 30"W	-25.461	-42.825
	BM-S-24	Brazil	-25° 24' 54"S	-42° 20' 42"W	-25.415	-42.345
	Sépia	Brazil	-25° 13' 22.7994"	-42° 31' 22.8"	-25.223	-42.523
Sergipe Alagoas basin	Rabo Branco Field (onshore) (SEAL-T-412/429)	Brazil	-10° 48' 24"S	-37° 01' 51"W	-10.807	-37.031
	Field Sanhaçu (onshore) (POT-T-436/479/480)	Brazil	-05° 13' 52"S	-36° 55' 54"W	-5.231	-36.932
	POT-M-663 (POT-16)	Brazil	-03° 53' 20"S	-37° 22' 01"W	-3.889	-37.367
Pontiguar basin	POT-M-665 (POT-17)	Brazil	-03° 53' 20"S	-37° 07' 05"W	-3.889	-37.118
	POT-M-760 (POT-16)	Brazil	-04° 07' 30"S	-37° 07' 34"W	-4.125	-37.126
	POT-M-853 (POT-17)	Brazil	-04° 23' 35"S	-36° 51' 54"W	-4.393	-36.865
	POT-M-855 (POT-17)	Brazil	-04° 23' 35"S	-36° 36' 43"W	-4.393	-36.612
Barreirinhas basin	BAR-M-300	Brazil	-01° 38' 52"S	-42° 07' 49"W	-1.647	-42.130
	BAR-M-342	Brazil	-01° 52' 26"S	-42° 07' 24"W	-1.873	-42.130
	BAR-M-344	Brazil	-01° 52' 32"S	-42° 52' 23"W	-1.875	-42.873
	BAR-M-388	Brazil	-02° 04' 16"S	-41° 56' 17"W	-2.071	-41.938
Pernambuco basin	PEPB-783	Brazil	-08° 09' 43"S	-34° 21' 04"W	-8.162	-34.351
	PEPB-839	Brazil	-08° 22' 12"S	-34° 22' 48"W	-8.370	-34.380
Lower Congo	Bloco 14	Angola	-05° 39' 12"S	11° 26' 48"E	-5.653	11.447
	Bloco 14K-A-IMI	Angola	-05° 38' 15"S	11° 18' 50"E	-5.638	11.314
	Bloco 32	Angola	-07° 19' 11"S	11° 17' 39"E	-7.320	11.294
Rovuma	LNG Plant (Rovuma - onshore)	Mozambique	-10° 49' 40"S	40° 33' 00"E	-10.828	40.550
	Rovuma Área 4	Mozambique	-11° 06' 07"S	41° 02' 47"E	-11.102	41.046

Walvis	Block Pel 82	Namibia	-22° 20' 44"S	12° 36' 01"E	-22.346	12.600
Orange	Block Pel 83	Namibia	-28° 60' 00"S	14° 00' 00"E	-29.000	14.000
	Block E	East Timor	-09° 52' 37"S	126° 14' 53"E	-9.877	126.248
Rio Muni	Block 6	Sao Tome e Principe	00° 37' 59" N	07° 55' 21"E	0.633	7.922
	Block 11	Sao Tome e Principe	00° 13' 15" N	07° 18' 11"E	0.220	7.302
	Block 12	Sao Tome e Principe	-00° 38' 45" S	07° 17' 35"E	-0.645	7.292

Site	Country	Latitude (deg min seg)	Longitude (deg min seg)	Latitude (deg.ddd)	Longitude (deg.ddd)
<b>Renewable Energies Sources</b>					
ParkAlgar	Portugal	37° 13' 54"N	08° 37' 46"W	37.232	-8.629
Ventinveste	Portugal	40° 13' 06"N	08° 03' 13"W	40.218	-8.056
Parque Vale Grande	Portugal	40° 11' 20.1006"	-7° 54' 46.4394"	40.188917	-7.912900
ESCARNES	Spain	41°16'11.18"N	0°17'51.77"O	16.186	17.863
ENVITERO	Spain	41°15'34.74"N	0°17'6.81"O	15.579	17.114
MOCATERO	Spain	41°14'35.80"N	0°15'8.58"O	14.597	15.143
ESCATRON DOS	Spain	41°14'32.31"N	0°16'15.66"O	14.539	16.261
IGNIS UNO	Spain	41°13'49.17"N	0°15'10.57"O	13.820	15.176
EMOCION	Spain	41°14'16.17"N	0°17'7.23"O	14.270	17.120
MEDIOMONTE	Spain	41°13'24.99"N	0°15'47.25"O	13.417	15.788
PALABRA	Spain	41°13'37.52"N	0°14'1.13"O	13.625	14.019
ESPLENDOR	Spain	41°11'47.61"N	0°20'27.67"O	11.794	20.461
HAZANA	Spain	41°12'46.33"N	0°20'12.07"O	12.772	20.201
TALENTO	Spain	41°12'18.38"N	0°20'42.06"O	12.306	20.701
EL ROBLEDO	Spain	41°15'53.04"N	0°10'16.73"O	15.884	10.279
SIERREZUELA	Spain	41°15'39.68"N	0°9'35.81"O	15.661	9.597
RIBAGRANDE	Spain	41°15'26.63"N	0°10'22.12"O	15.444	10.369
VALDELAGUA	Spain	41°15'7.82"N	0°9'14.46"O	41.3	-0.2
VALDIVIESO	Spain	39°11'12.65"N	3°19'40.24"O	39.2	-3.3
VALDECARRO	Spain	39°11'12.65"N	3°19'40.24"O	39.2	-3.3
ALCAZAR 1	Spain	39°11'12.65"N	3°19'40.24"O	39.2	-3.3
ALCAZAR 2	Spain	39°11'12.65"N	3°19'40.24"O	39.2	-3.3