

# **Impact Assessment of the South Sinai Power Plant at Nuweiba on the Local Tourism Industry**

**Conducted on behalf  
of the Complaints Department of the  
European Investment Bank**

**By**

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# 1. EXECUTIVE SUMMARY

On request of the EIB's Complaints Department; a field mission was conducted to assess the impact of the proposed South Sinai 750 MWe Power Plant at Nuweiba/Egypt on the local tourism trade.

During the last decades, tourism in South Sinai expanded very rapidly. Hotel capacities grew at an annual rate of 19% to 58.500 rooms in 2009. These modern facilities are very much concentrated at Sharm el Sheikh and, to a lesser extent, at Taba and are serving a high-volume, price-driven segment of international tourism.

The project town of Nuweiba is located at the shores of the Gulf of Aqaba some 170 km north of Sharm el Sheikh and 70 km south of Taba. In the 1990s Nuweiba became a popular resort for earthbound tourism, mainly from Israel. But also European independent travellers - often staying in basic beach camps- came to enjoy partying, the marine life in the Gulf and the desert.

At present, there are four star-rated hotels (939 rooms) and six un-rated hotels (569 rooms) in the wider Nuweiba area. These facilities account for some 2% of all overnights in South Sinai. In addition, there are about 100 basic sea side camps (app. 2,500 huts) which are mainly used by independent, young and eco-minded travellers. Most of the camps are run by members of the two local Bedouin tribes. Authorities regard camp tourism as substandard and do not officially recognize it.

Apart from beach tourism, Nuweiba is an ideal starting point for excursions and maritime explorations. Bedouins dominate the excursion/safari business. Popular among travellers are camel and jeep safaris to natural and historical sites in Sinai's interior. Expatriates own some hotels and/or operate local diving centres.

The impact of the proposed power plant during construction and operating phase is analysed separately. The 28 months construction period will require a workforce of up to 3.000 people. As most of the needed qualifications are not locally available, the vast majority of the workers will have to be brought in from other parts of the country. This "import" of labour will create temporary demand for accommodation, thus giving local hotels a secured income for a limited time.

However, the traditional tourism will suffer under the construction. Increased traffic and transport activities will disturb tourists. If not carefully managed, the large influx of outside workers could create tensions between them and locals/tourists. There is a danger that during the course of construction the image of Nuweiba as a quiet tourism destination will suffer.

It is understood that the plant's technology will be state-of-the-art. This means that the air and noise emissions will be within tolerable limits. How-

ever, the major blow for local tourism will be the “visible pollution” of the plant.

The plant’s dimensions are of such a magnitude that it will be seen from all over Nuweiba. A computer modelling shows its dramatic visual impact and that it can not be mitigated by any camouflaging measures. The dominating sight of the plant will destroy the image of Nuweiba as a tourism resort. The question is whether or not this image flaw can be contained to the Nuweiba town or it will also harm tourism in other coastline locations.

As a consequence of the plant’s existence, international tourism in the area will decline dramatically. Foreign travellers always have a chance to select alternative destinations without any major impairment. In future, hotels and service providers will have to adapt to the new situation either by targeting the smaller transit traveller’s market, closing operations or relocating.

In contrast to volume-driven tourism being offered at Sharm el Sheikh and Taba, the Nuweiba region without the proposed power plant could become a nucleus for the development of modern eco-tourism. Currently this is a fast growing niche market with great future prospects. The development of eco-tourism would help to diversify the mass tourism strategy and thus make tourism in South Sinai as a whole more sustainable.

The Nuweiba region’s natural beauty and its local and indigenous population with a long tradition of living in harmony with nature, are valuable assets for the emergence of eco-tourism. Such a new direction of development should include the camp and safari operations which of course have to be substantially upgraded and expanded to meet international standards.

## **2. FOREWORD**

The Complaints Department of the EIB (CDE) received a number of stakeholder complaints regarding a planned 750 MWe gas fired power station at Nuweiba with an EIB participation in the debt financing. The CDE commissioned an independent investigation into the power plant's impact on the local tourism industry, the socio-economic situation and biodiversity. A joint field mission of the CDE and three experts was conducted during the period Oct 15 to 23, 2009.

At Nuweiba the tourism expert held numerous meetings with stakeholders such as hotel owners, hotel managers, workers and guests as well as travel agents, diving station operators, restaurant owners and safari / excursion tour operators. In addition, meetings with local government officials, NGO representatives and employees of the sponsor and the team responsible with the project's EIA were held.

Public meetings were conducted to investigate the attitudes and aspirations of the general public towards the project. Apart from the numerous contacts with stakeholders, the Nuweiba area was intensively travelled in order to obtain first hand observations and visual impressions regarding the present status of the area and its tourism industry. Initial results of the mission were discussed in Cairo with representatives of the Ministry of Tourism, the EEAA and the sponsor.

The tourism expert wants to thank all contacted persons for the information provided and opinions expressed. He is particularly thankful for the hospitality granted and the numerous fruitful discussions.

## **3. STATUS OF TOURISM**

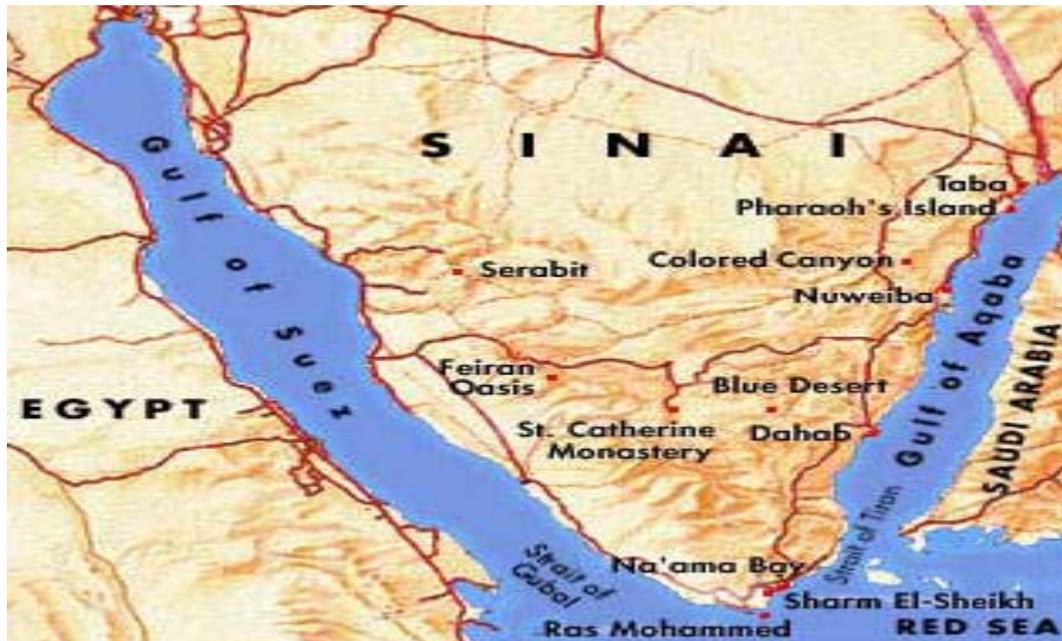
### **3.1 Tourism in South Sinai**

Sinai does not have the rich oil and gas deposits that could stimulate economic development. After the return from Israeli occupation in 1982, the South Sinai coast was earmarked as a priority development zone for tourism. The destination has been marketed to investors and vacationers as the "Egyptian Riviera".

#### **3.1.1 A Story of Rapid Growth**

South Sinai provides genuine year-round destinations based on abundant sunshine which is also readily accessible to European markets. With clear water and rich marine life, South Sinai's attraction for international tourists originally was based on diving. The hinterland of South Sinai contains a

range of historical, religious, scenic and natural attractions with potential for future development.



**Map 1: Overview South Sinai**

The rapid growth of the area as an international tourism destination is best illustrated by the tremendous expansion of its hotel capacities. In 1989, there were just 13 hotels in the region with a total of 1,150 rooms. In 2009, there are 285 hotels with almost 58,500 rooms. Between 1996 and 2009 the average annual growth rate was almost 19%. South Sinai now comprises 24% of all hotel rooms in Egypt.

Almost half of all hotels in South Sinai fall into the 5-star category, with a further 30% in the 4-star/4-star plus grade. Sharm el Sheikh concentrates the highest number of 4 and 5 star accommodation products. Average occupancy rates in South Sinai's hotels are in the range of 60% and tend to exceed those for the country as a whole. However, these are considerably higher in Sharm el Sheikh than in all the other tourism locations in South Sinai. This development is very concentrated on Sharm el Sheikh which accounts for 83% of the available bed stock for rated hotels, followed by Taba/Nuweiba with 11% and by Dahab with 4%. For complete hotel statistics see annex A. The extensive accommodation capacities that have been and are still being developed are now serving a high-volume, price-driven segment of international tourism markets.

However, this dramatic expansion comes at a price. There is a constant strain on the natural resources and NGO's claim that the environmental bearing capacities have been exceeded. On land, infrastructure needs to be constantly expanded and upgraded. There are also questions on the prevailing current business model as the ever increasing number of highly rated hotels creates pressure on prices and profitability. In order to lessen this negative impact, the Ministry of Tourism is now considering a multi-annual programme for more sustained and eco-friendly development in

Sharm el Sheikh. The latest tourism development plan (2007 to 2017) calls for a more sustained growth scenario. Instead of the continuation of rapid quantitative expansion, the plan advocates a re-orientation and a focus on quality and diversity of the tourism product.

### **3.1.2 Need for more Electricity Investments**

The accelerated economic development requires new investments in power generation and transmission. During the period 2000 through 2010, the annual average growth rate of electricity demand in Egypt is expected to range from 6.5 to 7.5 %. According to the Electricity Holding Corporation, more than 99 % of the population are connected to the national grid.

The Delta Company is in charge of electricity generation in South Sinai. All cities in South Sinai are now connected to the national grid. South Sinai loads are mainly supplied with electricity from one or more of the following three sources: The Canal Company for Electricity Distribution; Private Sector Electricity Service Provider; and Customer (end user) self generation and distribution.

In general, tourism resorts do not have major complaints in connection with power supply, and power cuts and voltage fluctuations are rare. However, the extension of power supplies to remote areas and Bedouin settlements remains a key issue.

The country's Sixth Development Plan (2007/08-2011/12) includes provisions for the installation of a new power generation plant with a capacity of 750 MWe in South Sinai (originally to be located at Sharm el Sheikh as the main consumption centre), and a 350 MWe station at Oyoum Mousa. The investment cost of these two stations were estimated to be about LE 5 billion.

## **3.2 Tourism in Nuweiba**

### **3.2.1 Nuweiba - Key Features**

The project town of Nuweiba is located on the Eastern Coast of the Sinai Peninsula, 70 km south of Taba, 170 km north of Sharm el Sheikh and 110 km from the famous Saint Catherine's Monastery. Nuweiba means, "bubbling springs" in Arabic, and it is one of the Sinai's five oases, with a number of green, tree covered areas that add to a stunning contrast to the normal desert scenery and the deep blue of the Red Sea.

The municipality of Nuweiba is located on a sandy delta created by a wadi outflow of the mountainous interior. The plain has a north to south extension of almost 9 km and an east to west of up to 2 km. In the very south of Nuweiba town a settlement of the Muzeina Bedouin tribe is located. North of it the town's port area is situated, which contains the harbour and an

adjacent commercial area where small scale logistic and industrial companies are located.

The beach north to the port area is designated for tourism development. This area hosts a few star-rated hotels (e.g. Hilton, Swisscare), several unfinished hotel projects, a number of beach front camps and a diving centre. In the area between the beach tourism sites and the mountain range, mixed land use dominates. According to town planning, this is a designated commercial area where the sewage treatment facility and a desalination plant are located. However, in this neighbourhood also Bedouins have erected a number of residential houses.

North of the second wadi leg, the town centre of Nuweida is located. It contains administrative buildings as well as residential quarters. Continuing north, the settlement of the Bedouin Tarabin tribe is placed with beach-front camps and private homes on the surrounding slopes. For more information on the Bedouins culture and attitudes towards tourism see annex B.

## Nuweiba Overview

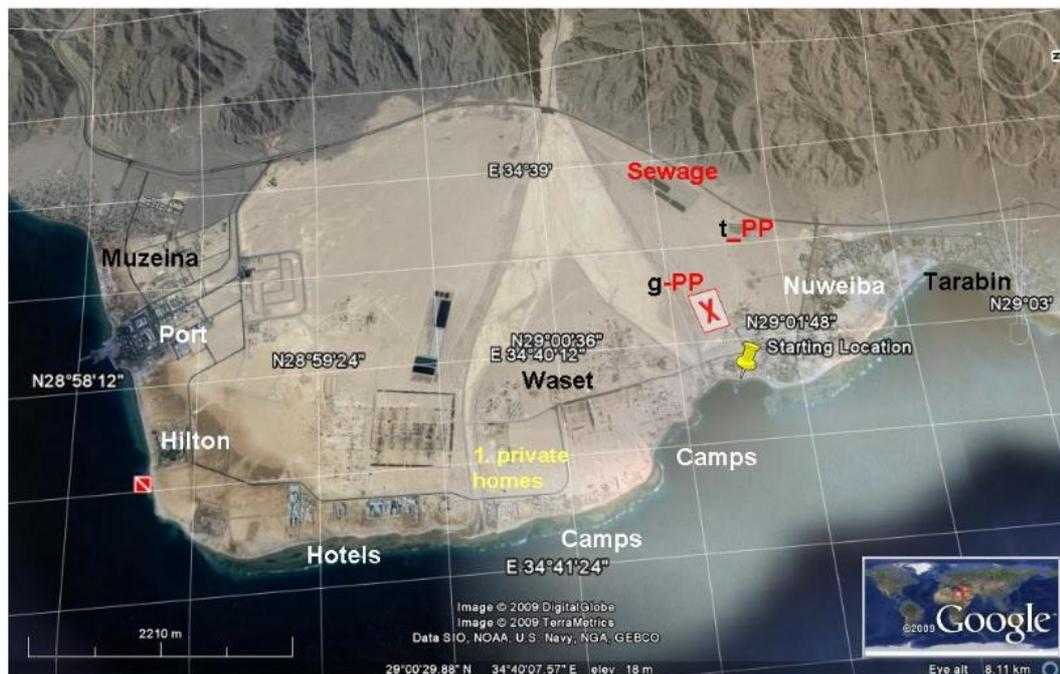


Figure 1: Nuweiba Overview

Reportedly, Nuweiba has a population of app. 5,000, of which a substantial number are members of the two Bedouin tribes living in the region. The presence of semi-nomadic Bedouins makes an exact count of the residential population difficult. Nuweiba is the regional centre for the northern Gulf of Aqaba offering essential services (e.g. hospital, schools,

shopping, administrative) to its residents, tourists as well as rural populations.

Nuweiba has one of Egypt's most important ports. The harbour is key for foreign trade between Egypt, Saudi Arabia and Jordan. During Ramadan, many Egyptians and Bedouins head to Nuweiba on their way to Mecca. For tourists and foreign visitors, Nuweiba is also the easiest way to travel to the famous Jordanian historical site of Petra, and to the old cities of Saudi Arabia, on one of the daily ferries.

For many years the area north of the town up to the Israeli border was known under the name Nuweiba. However, since the new international airport near Taba is in operation, Taba has become a destination of its own. More recently, there are initiatives to rename the airport to Taba / Nuweiba in order to better promote the wider area as it was done previously.

### **3.2.2 History of Tourism**

In the old days, the Nuweiba oasis settlement was benefiting from its central location at the coastline and its function as the gate for visitors to Sinai's interior.

During the Israeli occupation, Nuweiba was the site of a large farming settlement, which later was converted into a residence for Egyptian government officials. For a historical aerial view of Nuweiba see annex C. After the Sinai was returned to Egypt in 1982, Nuweiba became a popular place for earthbound Israeli travellers looking for camp grounds and short vacation opportunities. In contrast to the evolving mass tourism in Sharm el Sheikh, Nuweiba, up to the year 2000, was mainly a destination for individual travellers. The number of Israeli border crossings peaked in the late 1990s, when more than a million Israeli tourists visited Egypt in a single year. This boom triggered a lot of land sales and tourism development in the period 1995 to 2000.

However, in the following years, political instability in the region caused a series of setbacks such as the start of Intifada (2000), 9/11 (2001), Iraq War (2003), Nuweiba bombing (2004), Dahab bombing (2005) and Sharm el Sheikh bombing (2006). Today the outskirts of Nuweiba and the coastline north to Taba are littered with the shells of half-built resorts.

Only in 2009, tourism picked up again with a substantially increased number of Europeans visiting camps in and around Nuweiba, with a strong holiday season from Israel, and a considerable Egyptian contingent visiting in September/October.

### 3.2.3 Accommodation

The rapid expansion of accommodation facilities in Sharm el Sheikh, and to a lesser degree, in Taba is based on a development model whereby domestic investors buy land, construct mainly four and five star hotels and then give them for management to international hotel chains to cater to foreign volume markets.

This development pattern has not taken place in Nuweiba which is more characterized by a moderate growth of star-rated hotels as well as the availability of a considerable number of basic beach camps being owned and operated by local residents. The target market for these beach camps are alternative travellers and eco- and adventure tourists.

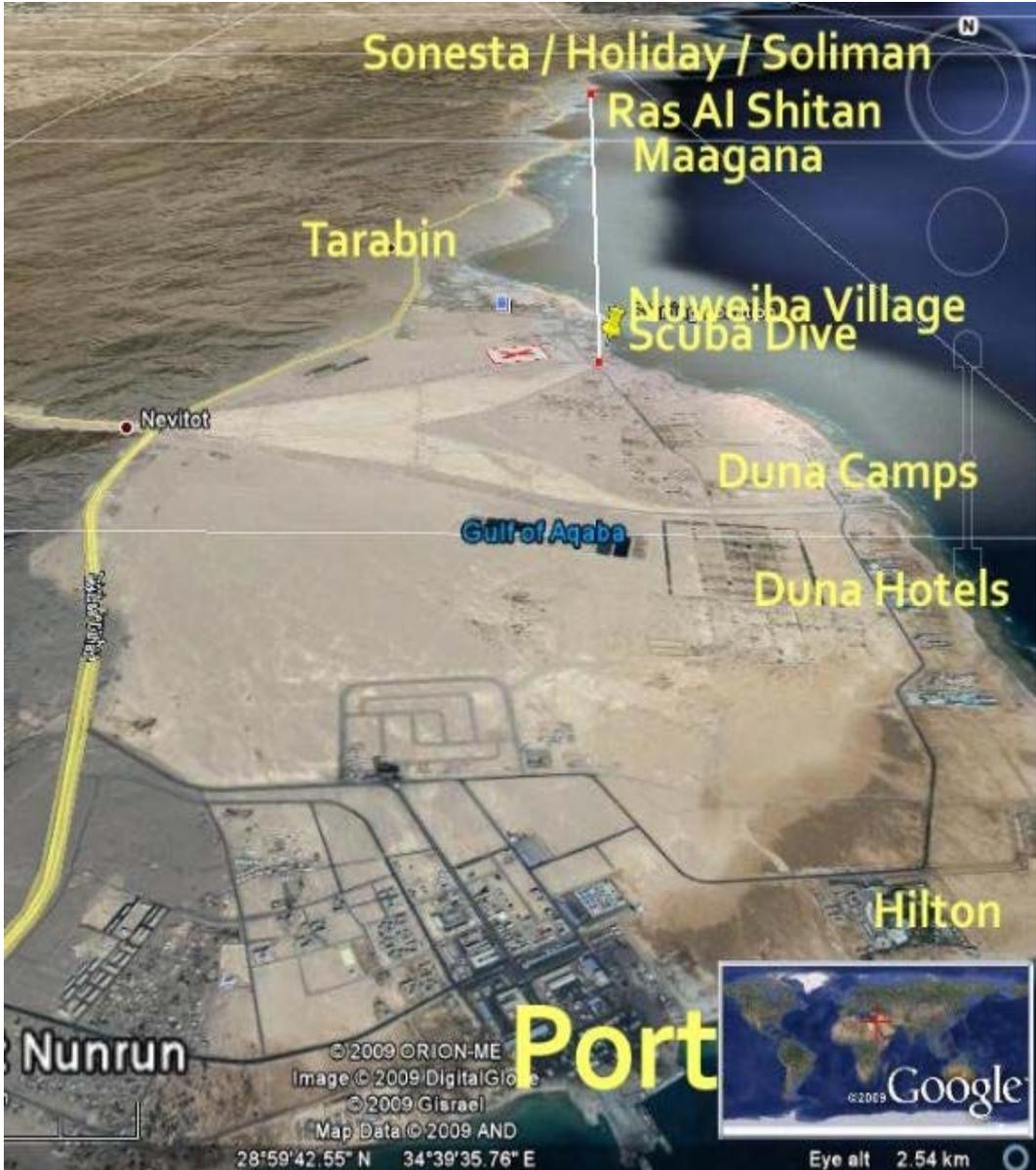


Figure 2: Location of Nuweiba Hotels/Camps

According to official statistics, at Nuweiba there are four hotels classified as five and four star facilities with together 939 rooms. These hotels are located either within the city limits or some 10 km to the north. They are targeting the international volume market. Within the city boundaries there are also six other hotels serving more specialist markets, e.g. divers and /or transit tourists. They are not rated according to the **Egyptian hotel classification system. Those hotels have a consolidated capacity of 569 rooms.** In addition, there are at least six hotels under construction (app. 1,400 rooms) with uncertain completion and opening dates. For a detailed break down of the local hotel facilities see the following table:

**Table 1: Nuweiba Hotels - 2009**

Hotel	Classification	Location	Opening	Rooms	Occupancy	Average Room Rate
	Stars				(1-9/2009)	(1-9/2009)
	<b>Egypt. Strand.</b>					
Hilton Nuweiba	5	Town	1992	200	83,90%	205,16
Sonesta	5	10 km north	2004	440	57,47%	129,94
Hholiday Inn Taba	4	10 km north	2004	172	79,11%	70,82
Nuweiba Village	4	Town		127	59,12%	66,35
<b>Subtotal star-rated</b>				<b>939</b>		
Elaria		Town		200		
Swiss Care		Town	2005	48		
Regina		Town		191		
Ciao		Town		40		
City Beach		Town	1992	50		
Nakhil Inn / dreams		Town		40		
<i>Tropicana</i>	<i>Closed in 2006 !</i>	Town			86	
<b>Subtotal Other Hotels</b>				<b>569</b>		

Source: South Sinai Hotel Association

In 2009, the Nuweiba star-rated hotels show a slightly better performance (occupancy levels and average room rates) than the hotels in neighbouring Taba.

At present, the market share of Nuweiba hotels in South Sinai is only marginal. According to official statistics they account for app. 2% of the region's overnights.

Apart from the rated and unrated hotels at Nuweiba, there is also a considerable number of beach side camps offering basic accommodation. These facilities are not reflected in the official tourism statistics as they are regarded by Egyptian authorities as substandard. Another problem is that the camps which are often run by members of the Bedouin community are located on plots with unclear land titles. Formally, these properties belong to the “Tourism Development Authority” (TDA), but the agency accepts the present land use and does not enforce land clearance. So the authorities generally ignore the existence of camps. On the other hand, tax authorities are very well aware of the situation and regularly collect income tax from owners/operators of these basic accommodation facilities.

In the absence of any official figures it is hard to determine the size of the camp market. The following figures are based on data received from local sources familiar with the camp situation. The presented figures should be understood as an indication only. Within Nuweiba and the adjacent TDA areas in the north there are reportedly app. 100 camps with estimated 2, 500 huts. For a camp location map and camp views see annex D. Location information and tentative camp size is given in the following table.

**Table 2: Camps in the Nuweiba Area - 2009**

<b>Location</b>	<b>Number of Huts</b>
<b>TDA area: Ras al Shitan (original Shatteen):</b>	
Castle Beach	60
App. 10 other campsites with an average number of 30 huts per camp	300
<b>Maagana 7km north</b>	
Maagana 100 huts	100
Rock Sea 20 huts	20
App. 10 more campsites: average number of 30 huts	300
<b>5 km near the check point to Nuweiba Tarabin</b>	
App. 15 campsites	n.d.
<b>Duna Campsites</b>	
54 Campsites	1.350
<i>App. 250 concrete / AC rooms</i>	
<b>Tarabin</b>	
14 Campsites	400
<i>200 rooms with / without A/C</i>	
<b>Total</b>	<b>2.530</b>

Source: Local NGOs

The quality of the accommodation offered varies widely. Some camps provide A/C and other amenities while most offer only a very basic place to stay and sleep. Accommodation consists of simple huts with basic shower and toilet facilities. Meals are served in a central location (tent). Most camps are not connected to the grid and generate electricity with their own generators. However, typical camp guests often have different expectations from the star hotel clients. Camp guests are looking for a tranquil inexpensive place to stay where they are close to nature. Often they are also anxious to learn more about Bedouin culture.

There is hardly any historical data on camp tourism and occupancy levels. For Nuweiba accommodation facilities, the boom time were the 1990s. After some very quiet years, the business picked up in 2009. Reportedly, in the summer of 2009, in key Muzina camps occupancy was 30 to 50%. During the September to October holiday period, it climbed to about 60 to 70%. Occupancy levels in the Tarabin areas were generally lower with only two to three camps reaching the above mentioned figures.

### **3.2.4 Origin and Interests of Tourists**

Star-rated hotels have mainly European guests all year round. In addition, particularly during holidays, there are also Egyptian guests from the Middle East. Main activities in demand are water sports (diving, snorkelling, swimming), relaxation and safaris (camel, jeep). Furthermore, excursions to historical (e.g. Saint Katherine's Monastery) and natural sites (e.g. Canyons) are popular among hotel guests. Also extended tours to Petra (Jordan) and Cairo are in demand.

While the number of guests in star-rated hotels and their activities are reflected in official statistics, such data is not available for camp tourists. The following information is based on sources working in the Nuweiba travel industry familiar with the camp situation.

According to these sources, camp visitors are predominately of international origin, mainly from Europe (Germany, UK) and Israel. They represent some 70% of the market. The balance is made up of Egyptian travellers. The interests of camp visitors vary with the season. During summer (June to September) favourite activities are beach and water sports plus safari excursions by jeep. In the winter season (September to May) adventure tours like jeep, camel treks and relaxation are most popular activities. Many guests are eco-minded and try to spend their holidays in harmony with nature. The average stay in camps is estimated to be app. 4 days.

### 3.2.5 Tourism Services

Apart from accommodation facilities there are also numerous other service providers involved in the local tourism trade. These are mainly diving centres, excursion tour operators, restaurants and others services.

At Nuweiba there are two major diving centres (Mike's dive centre and Emperor) which offer a full range of services for their mainly foreign clients.

The safari business is in the hands of the members of the Muzina and Tarabin Bedouin tribes. The products offered include a variety of excursions and sightseeing trips. Popular are camel excursions – ranging from half-day tours to safaris lasting several weeks. Camel safari operators normally own few animals. If the demand exceeds their life stock, they turn to their extended family in mountains to provide additional animals. This means that also Bedouins in remote areas benefit from a high demand in the safari business. Another popular product among tourists is jeep safaris. Again, Bedouins act as drivers and excursion guides. Also desert trips and desert dinners are in demand.

At present, Bedouins legally can conduct only one day safaris without any restrictions. According to Egyptian security regulations, longer safaris officially require the presence of security forces. However, based on the mistrust between the authorities and the Bedouins, safaris are carried out in the traditional way without such a security escort. Again, as in the land title issue, the Government does not enforce its regulations.

There are no detailed statistics on the number of Bedouins directly or indirectly involved in the tourism trade. However, members of the Bedouin community repeatedly stressed that at present, tourism is the most important sector for their employment and income.

Finally, in Nuweiba there are a number of restaurants and other service providers catering to tourists. Reportedly, four restaurants (Cleopatra Restaurant, Dr Shishkebab, Habiba Camp, Han Kang) are popular among tourists. Businesses in the port area and taxis benefit from the transit traffic.

## **4. IMPACT OF THE POWER PLANT ON TOURISM IN NU-WEIBA**

### **4. 1 Conceptual Framework for Measuring the Power Plant's Impact on Tourism**

The rise of mass tourism in South Sinai during the last decades is due to the fact that the supply of modern hotel facilities and related infrastructure expanded very rapidly. This development has been stimulated by generous tax concessions to investors (e.g. 10 year tax holiday on corporate profit). Simultaneously the Government invested large amounts into infrastructure development (e.g. airports, roads, telecommunication) to make the new destinations attractive for guests. This means, that the Egyptian authorities, together with national investors, very much control the supply side. However, this is just one condition for a successful tourism and does not take into account the emotional and subjective expectations of the foreign tourist (demand side).

However, in order to fill all these new capacities, international guests have to come in large numbers. So far, main source markets are the UK, Germany, Russia and other European countries. In these source markets, South Sinai resorts fiercely compete with other "warm" water destinations such as the Caribbean, the Canary Islands, the Maldives and other islands in the Indian Ocean as well as South East Asian coastal regions. Apart from issues of price competitiveness, the demand is also subject to other factors. External "shocks" like natural disasters (e.g. tsunami), terrorist attacks (Luxor incident), the outbreak of diseases (bird flu), certainly affect the demand for a destination. In addition, the occurrence of natural features like the mass expansion of algae in swimming waters or major construction works can temporarily or permanently damage the image of a destination.

Often tourists judge not only by actual facts but what they perceive as a potential risk for an undisturbed holiday. Therefore, the decision for or against a certain destination is not only based on facts but is also influenced by the perception / image of a destination. It is important to understand that these decision making processes happen in the source markets and cannot be controlled by authorities in the destination markets.

Based on this analysis, the impact of the power plant will be assessed not only by considering its measurable emissions on its immediate neighbourhood, but also how such a plant is perceived by foreign tourists.

## 4.2 Phases of Power Plant Development

The impact assessment will distinguish between two phases. These are the construction period and the subsequent operation.

### 4.2.1 Construction Phase

The construction phase is scheduled to last an estimated 28 months during which up to 3,000 engineers and workers will be required for the civil works, the erection and commissioning of the plant.

The plant's location and its distance to neighbouring infrastructure and residential areas are given in Figure 3.



Figure 3: Vicinity of Power Plant

#### 4.2.1.1 Demand for Accommodation for Project Staff

The construction of the power plant will provide a great stimulus for the local economy. It is expected that local hotels will benefit as most of the engineers and professionals will require adequate accommodation. Therefore, the project company must rent a large number of rooms in the project area. This means that the contracted hotels (e.g. Hilton) will have a secured income for two to three years.

In addition, the project company has indicated that it is prepared to acquire / compensate properties which are located close to the project site (e.g. Scuba Diving Centre). As a consequence, only a few hotel and / or service providers have the prospect of receiving compensation as they cannot continue to operate in their present location or get a secured business during the plant's construction.

#### 4.2.1.2 Construction Traffic will harm Traditional Tourism

At the same time, the construction will be a burden for traditional tourism. The construction phase will be characterized by considerable transport and building activities. These will be required in order to prepare the site, to construct access roads and an auxiliary infrastructure, to erect the foundation and flood protection works as well as the full scope of civil, mechanical and electrical works required for the two combustion turbine-generator units, one steam turbine generator, two heat recovery steam generators and a desalination unit, water intake and outlet works and all other facilities. In addition, camps and related infrastructure to house the majority of the workforce must be built. Moreover, there is need to upgrade the general transport infrastructure as all equipment items – including the very heavy ones such as turbines, steam generators - will have to be shipped either through the presently inadequate Nuweiba port or have to be transported via highways through the mountainous hinterland.

All these necessary activities will generate much local transport and traffic. According to the EIA, during day shifts, on average some 265 trips of heavy duty vehicles and construction trucks and during night shifts some 90 movements are expected.

**Table 3: Estimated Power Plant Traffic Generation during Construction**

Vehicle Type	Traffic Generation			
	Day Shift		Night Shift	
	Peak	Total	Peak	Total
Heavy Goods Vehicles	10	100	0	0
Construction Workers Vehicles	82	164	77	88
Abnormal Loads	0	0	2	4
<b>Total</b>	<b>92</b>	<b>264</b>	<b>79</b>	<b>92</b>

Source: EIA, Section 6, Table 6-25, p. 95

Most likely Nuweiba city centre will be closed for construction traffic in order to protect local businesses and the close by residential areas.

One alternative route is along the beachfront which would create enormous stress for adjacent hotels and accommodation facilities such as Hilton, Swisscare and local camps. Tourists will be bothered by traffic related noise and dust emissions. In such a scenario the affected hotels will have great problems to sell rooms – particularly those facing the road. As this situation is going to last for several seasons, guests will have to be informed in advance by their tour operators about ongoing construction. Undoubtedly, such a “nuisance warning” will have a negative effect on bookings from overseas. Hotels in the immediate project area should consider the complete withdrawal from foreign markets as international tourists are unlikely to tolerate heavy impact from construction activities.

In particular camps in the Duna area will be affected by increased traffic as the huts with a light-nature design do not protect well against excessive noise and dust. Camp guests will start to avoid this area which can no longer offer a quiet place to stay.

#### **4.2.1.3 Construction Traffic Impact on Wider Area**

While the business of hotels / camps in the direct construction / transportation zone will be seriously affected, accommodation facilities located further away from the construction site are also likely to be negatively impacted. This prediction is based on the fact that due to the plant construction, the overall heavy traffic is going to increase which makes the region less attractive to clients looking for a quiet and calm place to stay.

#### **4.2.1.4 Impact of Construction Workers**

One other aspect to be considered during the construction phase is the requirements of up to 3,000 workers. Based on the needed qualifications, work experiences and preferences to work, the overwhelming majority of these jobs will not be filled with locals. For example, Bedouins have clearly indicated that they are not interested in manual labour and according to their education and training background, they are unlikely to be hired for technical positions. This means that the great majority of the new jobs will go to “imported” workers from other parts of Egypt.

According to the sponsor, the numerous contractors will be responsible for the “imported” workforce. This means that at present there is no clear and concise policy how to deal with the needs of the workers as well as their relationship to the community at large.

The presence of a substantial number of workers from outside the Sinai is a potential cause of conflict. During the previous construction of the gas pipeline, the then smaller workforce (800) created problems with the local population. Residents fear that the huge labour inflow required by the power plant will create problems ranging from conflicts over supplies (bread, water, and hospital facilities), recreational activities to the issue of beach access. In case such clashes occur, these will be mainly between the temporary workforce and the residential population. But there is also a danger that such conflicts could indirectly involve international tourists.

#### **4.2.1.5 Image Flaw during Construction**

Reports on the construction of a controversial power plant in a traditionally tranquil area will spread fast. Nowadays, more and more potential guests decide on their vacation based on research in the internet and on personal recommendations. If these assessments are disappointing, the image of the region suffers. Most likely, potential guests will not conduct a detailed research about which hotel / service facility is actually affected by the construction of a Power plant, but may rather decide to avoid a controversial region completely. Already in October / November 2009, the first cancellations were received by hotels, giving as a reason the assumed construction of the plant starting in 2010 (see annex E).

In such a situation, some hotels may decide to lower prices to become more attractive for budget-minded travellers. Such a policy is likely to bring back some business. However, the lasting success of such a strategy is questionable. Whenever tourism service suppliers try to overcome destination shortcomings with an aggressive pricing, such a policy shows only limited results at the bottom line. Problems are that there is a particularly fierce international competition among “cheap” destinations and that a poor destination image is hard to change.

Overall, already during the construction period there is real danger of losing international clients due to the negative impact of considerable building activities and a deteriorating destination image.

#### **4.2.2 Operation Phase**

Following the plant's construction, its operating life is expected to be 20 to 25 years. For its regular operation with a 3 shift mode, a work-force of app. 360 engineers and workers will be required

### **4.2.2.1 Plants parameters**

According to the project's plans, the plant will be state-of-the-art. This advanced technology will not only guarantee high power generation efficiency levels but also relatively low emissions. The calculated noise and air emission values are well within the standards required by the World Bank and the Egyptian authorities (see EIA, Executive Summary, p.15/17). One reason for achieving the low noise emissions is the design concept, which foresees that the turbines and all related heavy equipment will be housed in a concrete building preventing most noise from escaping into the atmosphere. However, the impact of the cooling water circulation on the marine environment is still under investigation.

One obvious feature of the plant is its sheer size. The two 375 MWe units will have each a stack of 90 meters in height and a diameter of app. 8 to 9 meters. The tentative dimensions of the power house are not specified but have to be large in order to host the most important noise emitting heavy equipment. The power company plans to mitigate the visual impact of this huge complex by painting the machine house in the colours of its natural surroundings (camouflage) and by planting high palm trees.

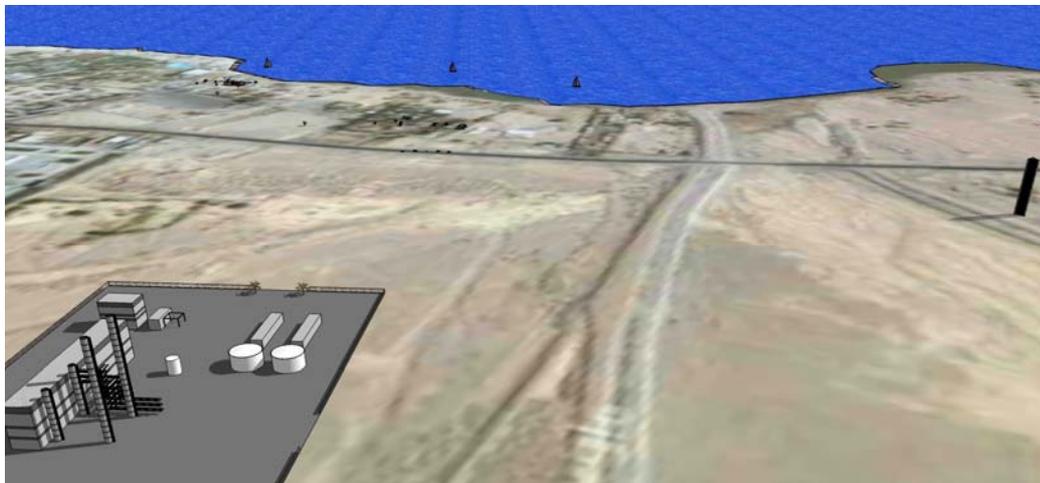
### **4.2.2.2 Visual Impact**

The dimensions of the plant have to be put in perspective with the fact that houses in Nuweiba are generally only two story buildings (app. 6 meters in height) and even the tallest construction (the mosque's minaret) is app. 30 meters in height. Also other enterprises located in the commercial area like the desalination and the wastewater treatment plants have no high structures. So far, the only tall building in the area is a wired communication tower close to the Hilton which is said to be 90 meters in height. However, this single tower is a steel-wired, transparent construction with a diameter of about one meter.

Given the dimensions of the power plant, this complex will visually dominate the area. According to computer modelling it will be visible from all parts of Nuweiba stretching from the Muzina village in the south to the Tarabin settlement in the north. During fair weather conditions the plant will be even visible from the opposite side of the Gulf of Aqaba (Saudi coast line) which is at least some 20 km away. For a simulation of the visual impact of the plant, a simple 3-D model has been developed to generate views. For more views see annex F.



**Figure 4: Simulated View from Beach Front**



**Figure 5: Simulated View towards Beach Front**

However, more important for this investigation than its long distant visibility is the plant's impact on Nuweiba's tourism. As discussed above, already during the construction phase local tourism is expected to suffer due to work related activities. A completed power plant will certainly have dramatic implications.

Above all, the plant will impair the open view from the shore line towards the mountain range and vice versa. The character of the area will change as it will become more "industrial". Although most tourists will not hear or smell any emissions directly, they still may feel uneasy with such a big plant in the backyard. Again, the tourist's perception is more important than objective emission facts.

The idea to organise visits to the power plant in order to convince tourists of its clean operation is not going to work. Most travellers are looking for unspoiled beach and water holidays and are not interested in visiting close by industrial sites. They rather feel intimidated by a huge power plant next door.

In particular, the visual impact of the plant will have a detrimental effect on leisure tourism. International tourists have the free choice where to go. Why should they want to stay in a place with a huge industrial structure? There are plenty of international alternative destinations with similar attractions and price levels but without any man-made “nuisance”.

The visual impairment will also make international tour operators reconsider the listing of hotels in the project area in travel brochures. Hotel bed purchasing managers of two TUI brands were given key parameters of the project to sound out what would be their reaction. They confirmed that in the case of the project’s implementation it is highly unlikely that these hotels will stay in their product portfolio. This was also confirmed by contacted specialised tour operators (diving), currently featuring smaller Nuweiba hotels. They also indicated that a power plant in the planned location would be a major obstacle for future cooperation and a reason for delisting partner hotels.

#### **4.2.2.3 Customers Compensation Rights for Visual Impairment**

Another aspect is the recent enforcement of customer’s rights by European Courts. These rights are especially spelled out in EU Council Directive 90/314/EEC on travel, holiday package and package tours, regulating any compensation for shortcomings and irregularities that might occur during a holiday trip.

The danger that such claims turn out to be justified will make travel agents reluctant to sell a resort area with an obvious handicap.

Again, it is important to understand that potential customers will be guided away from the destination Nuweiba with a dominant power plant, long before they have the chance to see and assess the plant’s visual impact on site. The image / reputation of the destination are of paramount importance for the selling process and a seriously damaged image is hard to be repaired.

#### **4.2.2.4 International Examples of Conflicting Interests between Power Plants and Tourism**

Regularly, the impact of new power plants on the environment and local communities is under scrutiny. Most power plants are being built on sites which are carefully selected to minimise the negative impact. Despite careful site selection, the location of new plants is often very controversial among different stakeholders.

Conflicts between tourism and power plants are relatively rare as power companies normally do not try to locate a new plant in an area with high recreational and tourism value. Nevertheless, recently there are a few examples of conflicting interests between promoters of conventional power generation and tourism stakeholders.

There are international examples of popular resistance based – among other reasons - on worries that new power generating facilities will harm the interests of local / regional tourism. Three case studies are presented showing how these concerns are expressed and dealt with in Germany, Australia and India. For case studies see annex G.

### **4.3 Impact of Power Plant on Nuweiba's Tourism**

The above analysis has shown that, with the power plant in place, there is hardly any future for international leisure tourism in Nuweiba. City- and other hotels used by transit travellers may still get their share of the business. Also taxi and other services catering to the transit will survive. However, all businesses directly related to leisure guests will be hit most. Existing hotels either will adapt to transit business or be forced to relocate. Scuba diving enterprises will have to move to other locations as their clients are particularly sensitive to changes and an “industrialisation”. Safari operations are more flexible as their main business is in the interior. Nevertheless, they may also decide to avoid Nuweiba with its dominating power plant.

The immediate plant's impact on tourism is related to its “visible pollution”, which will be virulent at Nuweiba. In this respect it could be argued that the hotels and camps further north would not be directly affected, as from their location the plant is not visible.

As discussed above, the image of a destination is a decisive factor when choosing a holiday location. In this regard the simple question is whether or not the negative image of Nuweiba will spread beyond the city limits.

## **5. CONCLUSION AND OUTLOOK**

The Impact of the power plant on local tourism will be severe. International leisure tourism will suffer most as Nuweiba's image will change from a holiday to a more “industrial” destination.

Already during the construction phase, increased traffic and transport activities will become a burden for holiday makers. Later, the dominant visual impact of the plant will deter tourists from spending their vacation at Nuweiba as there are numerous other unspoilt destinations to go to. Due to the predicted decline of international tourism, local hotels and service providers will be forced to concentrate on transit visitors or to relocate.

Decision makers may argue that at present Nuweiba accounts only for a fraction of the total South Sinai tourism and that other locations have a greater potential for expanding mass tourism. However, the key issue is to find the best strategy for tourism development in South Sinai.

For a more diversified and balanced product portfolio, it is advisable to develop eco-tourism as a complementary product line to mass tourism. This is a fast growing niche market with great future prospects. As long as the power plant is not built, the wider Nuweiba area seems to be a good location for this purpose. By applying a bottom-up approach, eco-tourism could start. The region's unspoilt natural beauty and its local and indigenous population with a long tradition of living in harmony with nature are valuable assets for the development of authentic eco-tourism.

For the success of such an approach it is essential to get the local tourism trade involved and empowered. Existing accommodation and services have to be upgraded and expanded to meet international eco-tourism requirements.

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