

ANALYSIS OF ALTERNATIVES

1. GENERAL

The Industrial Park is proposed in 631.108 Ha to cater 4(a) – Petroleum Refining Industry and 5(c) - Petro-chemical complexes (industries based on processing of petroleum fractions & natural gas and/or reforming to aromatics as per EIA Notification 2006 and its amendments.

Government of Tamil Nadu is under pressure to address the potential for the growth and development of Petroleum Refining and Petro- chemical complex industries at state level. SIPCOT identified three locations, considering demand to have access and a pre-set idea of establishing in Thoothukudi.

The environmental compatibility of the identified land mass is the key issue for the finalization of the particular location and extent of land for the proposed IP.

2. CHOICE OF ALTERNATIVE SITES

SIPCOT considered three alternative sites based on the need for promoting an Industrial Park in the proposed project location. However, the site in the Northern side are having Reserve Forest cover and on the eastern side human settlement is growing and there cannot be any new industrial development in this side.

Industrial growth, preciously, require good connectivity to the urban areas and other facilities like port, airports etc.

The alternative sites considered further west and south of Thoothukudi have favored the selection of the present location.

1. Further South/South East will essentially go into the Salt Pan operations.
2. The South and South East are thickly populated and will have problem in establishing further industries.
3. Further east is sea by 10 Km.
4. The present location is in the Thoothukudi district and is already under development as industrial area and the only location available with advantage of having Port at 15 km.

The proposed location for the IP was chosen as it enjoys the following environmental advantages:

- Availability of lands which are mostly dry and also not under cultivation and rather remaining as unutilized.



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- Proximity to nearby industrial infrastructures, especially power.

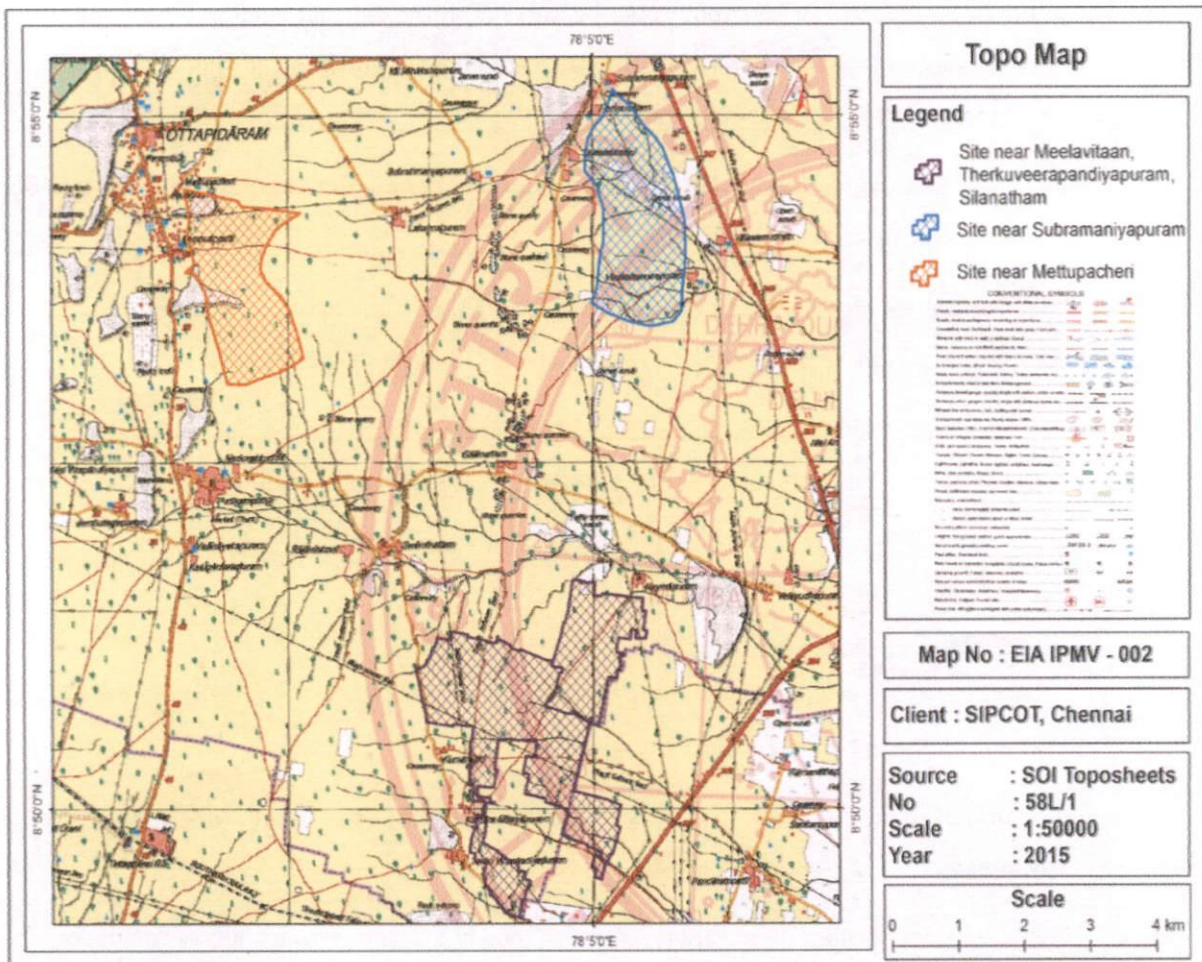
The alternative sites considered are:

1. Subramaniyapuram,
2. Mettupacheri and
3. Therku veerapandiyapuram, Meelavittan and Silanatham villages (hereinafter referred as Therku veerapandiyaouram villages) near Thoothukudi

Subramaniyapuram is close to NH38 but the site was not considered since agricultural land and habitations are nearby. Mettupacheri was not considered due to non availability of land and habitation nearby. At Therku Veerapandiyapuram, Silanatham and Meelavittan, land is already available with SIPCOT and the site is already declared for industrial use.

Hence SIPCOT site at Therku Veerapandiyapuram, Silanatham and Meelavittan is selected for this project.

The alternative sites with reference to the proposed project location are presented in Figure below.



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3. SITE MATRIX

The choice among the alternative sites which are available in Thoothukudi District was made by constructing a Matrix using Standard set of guidelines and set of recommendations in the Technical Guidance document of MoEF&CC.

The environmental and coastal compatibility of the location which is with respect to the following were studied and compared for all the three locations;

- ✓ Area
- ✓ Access
- ✓ Soil Conditions
- ✓ Ecological Index
- ✓ R& R Requirements

The Site Matrix was evaluated for the above said deciding criteria and the same is presented in Table 1.

**TABLE 1 SITE MATRIX- ENVIRONMENTAL ANALYSIS OF ALTERNATIVE SITES
SIPCOT IP**

S.No	Environmental Attributes	Subramaniyapuram	Mettupacheri	Therku Veerapandiyapuram
1	Location	Human Settlement within 1 Km	Human Settlement 1 Km	Human Settlement within 1 Km
2	Land availability	Government Lands	Government Lands	Government Lands
3	Change in Land use	Dry Agricultural	Dry Agricultural	Classified for industrial use
4	Access	Close to NH38	No Direct Access	Adjacent to NH38
5	Soil Characteristics	Red Sandy Soil & Black soil	Red Sandy Soil & Black soil	Red Sandy Soil & Black soil
6	Socio Economic	No Activity, Partially Barren	No Activity, Partially Barren	No Activity, Partially Barren
7	Air	Good	Good	Satisfactory
8	Water	No Water Source	No Water Source	No Water Source
9	Noise	Insignificant	Insignificant	Insignificant
10	RR Plan	RR Plan is required	RR Plan is required	No displacement as the area has no settlement. No RR Plan is required
11	Land Availability	To be acquired	To be acquired	Available and also notified by Government for the promotion of IP
12	Project Costing Budgetary Estimate	More	More	Less



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4. EVALUATION OF CANDIDATE SITES

The importance of environmental and coastal attributes was examined for their relevance to the proposed project of IP and arbitrary values were assigned. The site matrix selection criteria are given in **Table 2**.


**TABLE 2 SITE MATRIX- SELECTION CRITERIA
IP –SIPCOT**

Sl.No	Selection Criteria	Subramaniyapuram	Mettupacheri	Therku Veerapandiyapuram
1	Land Availability	Limited	Limited	Readily available
2	Road Access	Available	Available	Available
3	Soil Conditions	Red Sandy Soil & Black soil	Red Sandy Soil & Black soil	Red Sandy Soil & Black soil
4	Ecological Sensitivity	Yes	Yes	Yes
5	Change in land use	Required	Required	G.O for industries use is available
6	Interference with fresh water sources	Nil	Nil	Nil
7	R&R Requirements	Yes	Yes	Nil
8	Project Timeline	More	More	Optimum
9	Economics	More	More	Less
Site- III is preferred, on the basis of compatibility.				

The assigned values of importance for evaluation of candidate sites are listed in **Table-3**.

TABLE 3 SITE SELECTION CRITERIA- ARBITRARY VALUE OF IMPORTANCE

Sl.No	Selection Criteria	Value of Importance
1	Land Availability	200
2	Road Access	100
3	Soil Conditions	100
4	Ecological Sensitivity	200
5	Change in land use	100
6	Interference with fresh water sources	100
7	R& R Requirements	100
8	Project Timeline	50
9	Economics	50
Net Score		1000


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The exact score of values of each site were listed in **Table 4.**

**TABLE 4 SITE MATRIX - SCORE
CHOICE OF SITE SELECTION**

Sl.No	Selection Criteria	Importance Values	Subramaniyapuram	Mettupacheri	Therku Veerapandiyapuram
1	Land Availability	200	100	50	200
2	Road Access	100	75	50	100
3	Soil Conditions	100	50	50	50
4	Ecological Sensitivity	200	100	100	100
5	Change in land use	100	50	50	100
6	Interference with fresh water sources	100	50	50	50
7	R& R Requirement	100	50	50	100
8	Project Timeline	50	25	25	50
9	Economics	50	25	25	50
Total score		1000	525	450	800
Choice Ranking			II	III	I

The maximum score of **800** is seen for Therku veerapandiyapuram, Silanatham and Meelavittan villages and hence only, the land assignment and project development is recommended for the above site.



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