

CASE STUDY

# WHY ARE THE FARMERS OF A POWER-SURPLUS STATE LIKE TAMIL NADU RESISTING HIGH TENSION LINES AND TOWERS?



## **The Transmission System Strengthening Project**

This Project is based in the southern region of the country and will strengthen the power transmission and generation of energy to provide electricity to the said region. It is proposed to be funded by the IFIs namely AIIB (Asian Infrastructure and Investment Bank) and ADB (Asian Development Bank) in collaboration with POWERGRID which is an Indian state-owned electric utility company. Power Grid Corporation of India Limited (POWERGRID) is the borrower as well as the implementing agency for the Project. The implementation period of the Project will be four years (January 1, 2017 – December 31, 2020). The Project is estimated to cost USD \$303.5 million. The Government has requested a loan of US \$100 million from the AIIB and a loan of US \$50 million from ADB to help finance the Project (ADB's Loan No. and Title: 3365-IND: Green Energy Corridor and Grid Strengthening Project). Any shortfall in the funds required would be covered by POWERGRID.

As per the AIIB's environmental and social policy, the environment and social category of the Project is Category B. The stated objective of the project is to enhance the capability of electricity supply in the Southern Region. The impact of the Project will be increased availability and sustainability of power supply in India.

### **Project Description:**

The Project is a subset of the "HVDC Bi-pole Link between Western Region (Raigarh, Chhattisgarh) and Southern Region (Pugalur, Tamil Nadu) – North Trichur (Kerala)", which comprises the related schemes to expand the inter-state transmission network in western and southern India.

- **Scheme 1:** a +800 kV HVDC link from Raigarh (Chhattisgarh, Western Region) to Pugalur (Tamil Nadu, Southern Region).
- **Scheme 2:** 400 kV transmission segments from Pugalur to 5 other grid substations in Tamil Nadu state.
- **Scheme 3:** +320 kV HVDC link from Pugalur (Tamil Nadu) to Trichur (Kerala).

The three schemes combined will be able to wheel 6.0 GW of power from Chhattisgarh State to the Pugalur hub, and then transfer 4.0 GW into Tamil Nadu and 2.0 GW into Kerala. Financing from the Asian Infrastructure Investment Bank (the Bank) is proposed only for the 400 kV lines included in Scheme 2 (the Project), while the related substations (and Schemes 1 and 3) have been financed by the Asian Development Bank (ADB).

## **Summary of Impacts**

1. The land is rendered unfit for any agricultural use due to the constant electric current passing through the land where towers are erected or where transmission lines pass through.
2. The land which farmers are not able to use for agricultural purposes due to constant electric current becomes unfertile over the years and is then declared a wasteland by government.
3. Contact with transmission lines destroys coconut plantations, which apart from having commercial value also are a livelihood source for women.
4. There are restrictions on construction around transmission lines and the landowners cannot use their land the way they want.
5. Land with transmission lines over them or with towers lose their market value and people often don't find buyers in case they want to sell their land or get the price which is abysmally low. This scenario also helps land mafia in the region to grab lands at low prices.
6. Banks don't provide loans against the land with transmission lines over them or with towers.
7. Public consultations were a sham and most people have no knowledge either of the project or the public consultations that have been claimed to have taken place.
8. The compensation plan is deeply flawed and poorly implemented.
9. There are frequent fires that happen due to sparking around the transmission lines causing fires, which result in danger to cattle and their feed as well.
10. Health and safety of people have been compromised due to constant electric current in the land. Fires, electric shocks, and constant humming sound are serious safety issues faced by the local population.

## **Social and Environmental Impacts of the Project:**

### **1) Impacts on Land:**

#### **a) Impact on agricultural land:**

One of the most common complaints of the affected community has been regarding the constant flow of electric current transmitted in the adjoining land from where the lines pass and where the towers are built. This makes it difficult for people to work in the field especially during the monsoons.

Transmission lines also interfere with coconut plantations which are

quintessential to the southern region where the transmission lines are being constructed. People in the area have bad experiences from the previous set up transmission lines. As these trees grow quite tall, the transmission lines tend to interfere with them because of their vicinity to the plantations or sometimes due to the wind. **If these tree(s) come in contact with the lines by whatever means, they catch fire.** This is a huge economic loss for the plantation owners and well as for plantation workers. **Coconut Plantations apart from being of commercial activity have a huge economic significance for women as, in the Southern part of India, every part of coconut is used. Women use dried exterior of coconut to weave coir mats, coconut oil, coconut powder etc. which all have commercial value. Destruction of coconut plantations have impacts far greater than the commercial value of the wood or the fruit, it has serious socio-economic impacts for women.**

The Projects of high voltage lines have caused permanent damage to the land due to the construction and maintenance of the lines. As a part of maintaining the lines, the trees and such other structures which may interfere with the lines passing are pruned or demolished as the case may be which has been corroborated by the locals of the area where these lines are based.

Transmission lines and towers are hazards to field workers and interfere with the performance of mechanical and electronic farming machines and devices. Crop losses including yield reduction and interference with or modification of agricultural practices are also some of the many post-construction effects of transmission lines.

b) **Loss of rights over the land:**

In this project, the impacts on land are claimed to be of temporary nature in the IEER report and so the authorities have only planned for compensation in lieu of the land required temporarily for placing towers and stretching transmission lines overhead. The people are proposed to be given some compensation for the temporary acquisition, which is in lines with the market prices prevailing. But seldom has this happened. This claim that the impacts on land are temporary is totally false.

The local inhabitants and landowners where there are already existing transmission lines since last five to ten years or more have said that they never received any compensation from the government or an authority of such kind. The loss of land is more in terms of land turning non-fertile and not fit for any

use by them rather than being taken away and not given any money in lieu of the land.

**Restriction on construction if transmission line passes through the land:**

Not only do the towers placed in the land render it useless, also the people eventually lose rights over the land which they normally had the lines and towers not been placed there. **The land adjoining the towers till 100 meters on both sides and the land through which the lines pass are a cause of concern.** There are problems of earthing i.e., the electric current comes from the land and it's very dangerous for people to walk there let alone farming. These lands are the only sources of livelihood and income for people in that area. Due to the transmission lines, they either have the alternative of working in the mills in the adjoining villages as daily wage labourers (not all the villagers have this liberty) or find some other source of income as they practically can undertake only agricultural activity or use the land for only cultivation.

**c) Devaluation of land:**

**No bank loans against / no buyers for land with transmission lines or towers**

Devaluation of the land is not only in terms of its economic value but also in terms of its fertility and its use. It also must be noted here that the land after being used for placing towers and transmission lines is not considered fit to be put on lien to procure a loan from the banks. **Banks have requirements that the person applying for a loan must be at least 25 feet away from the towers to get loans sanctioned against the land.**

**A perfect scenario for the land mafia to operate**

Even here the people with power are getting benefitted. It is common knowledge that once the land comes under the transmission lines and towers, it becomes unfit for cultivation and building houses so the owners tend to get rid of the land for any meager amount and then this land sold is used to construct colleges and universities which have these lines and towers placed inside their campus risking the lives of thousands of innocent pupils. Kamalam Arts and Science College is one such example which is built under the lines as the real estate value got down once the line passed through the area. This college has around 1000 students.

**d) The reality of wasteland:**

A wasteland can be defined as an unused area of land which has become barren or has overgrown. As a matter of general practice in India, wastelands mostly are used for grazing cattle and sometimes for community purposes. The Project summary, the IEER report and the compensation plan have all mentioned that the land used for putting in place the towers and the transmission lines are mostly wastelands which are not used by the locals of that place. This statement holds partial truth about reality. The land in question is not used by the locals of that place but it is not correct to say that this land is a wasteland. In all its reality this land was and is an agricultural land belonging to certain person(s) who are unable to cultivate it in the recent past because of deficiency of monsoon. But after the towers put in place and transmission lines running overhead, it will be all the more impossible for people to carry out any agricultural activity even when the area receives an adequate amount of rains sufficient to perform cultivation.

There are such lands existing, which were agricultural lands but were taken over by the government to place towers and they rendered that land barren because it was not being cultivated due to lack of monsoons.

**e) Compensation challenges:**

Powergrid which is the implementing agency for this Project is also responsible for monitoring the whole process along with deciding the compensation amount and disbursing the same to the people.

Powergrid has compensated for the land, which comes under the towers, but people are not aware of whether the compensation was adequate or not. Shivasubramaniam from Poolankinaru village said that when the towers were erected on their land and they were not compensated for the same. People have not received any compensation for even the old lines, which were also erected by Powergrid.

Kanagaraja who is the vice chairman of Arasampalayam (where the claimed public consultation took place) panchayat said that 1 acre of land values 25 lakhs as per the market value but, the guideline value decided by registrar's office is 5-7 lakhs and the Powergrid is willing to pay guideline value. It is quite clear from this statement that the process of compensation is majorly flawed and plays a fraud on them by devaluing their land as against the prevailing market standards.

In the guidelines provided by the Ministry of Power, there is no clear definition of

the term “damages”. There are no proper guidelines in place related to damages from the Ministry. They are governed by the S. 67&68 of the Electricity Act, 2003 read with S. 10&16 of the Indian Telegraph Act, 1885. S.67 (3) of the Electricity Act, 2003 says that the licensee shall make full compensation for any damage, detriment, and inconvenience caused by him or anyone employed by him. A licensee in the present case is POWER GRID. S.10 of the Indian Telegraph Act, 1885 also talks about full compensation to the ones who have suffered losses or any inconvenience due to the transmission lines and towers.

POWERGRID as the implementing agency and AIIB and ADB as funding institutions should take into consideration the grievances of the impacted people who are asked to pay the price of erecting the transmission lines and are not even compensated fairly.

## **2. Fraud in the name of Public Consultations:**

POWERGRID’s IEER report has explicitly mentioned that local communities and stakeholders including women’s groups were involved in the process of environmental assessment through on-site discussions. Formal public consultations in the Project areas were conducted in the months of May and June 2016 and will continue throughout the Project cycle. As the Project will not have any significant environmental and social impacts, local communities support the Project. The grievance redress mechanism will function according to Powergrid’s ESPP procedures, which are consistent with multilateral banks such as the World Bank and the relevant national regulations.

But the whole process of public consultation was nothing short of a sham. There were consultations claimed to have been organized with the public and women groups. Instead in the same villages where public consultations have been claimed to have taken place, people have said that they were never consulted for any Project and their property was taken away ruthlessly with meagre or no compensation at all where the lines are already in place. Even at the places where the transmission lines and towers are to come narrate more or less the same story.

These meetings were claimed to be attended by Gram Panchayat leaders/members, Village heads, interested villagers/general public and representatives from POWERGRID. Village women folk also actively participated in the consultation. To ensure maximum participation, prior intimation in local language was given and such notices were also displayed at prominent places/panchayat office etc.

**Table 7.1: Public Consultation en-route of Transmission Lines**

<b>Sl. No.</b>	<b>Date &amp; time of Consultation</b>	<b>Venue</b>	<b>Persons Attended</b>
1.	31st May 2016, 11.00 AM	At- Community Hall Village- Ammapalyam District- Thiruvanamalai State- Tamil Nadu	Total 25 persons including Panchayat members, interested villagers/ general public attended
2.	1st June 2016, 11.00 AM	At- Village Primary School Village- Poosimalaikuppam District- Arani, State- Tamil Nadu	Total 77 persons including Panchayat head & member, interested villagers/ general public attended
3.	2nd June 2016, 11.00 AM	At- Gram Panchayat Village-Satur District- Arcot State- Tamil Nadu	Total 29 persons including Panchayat head & members, interested villagers/ general public attended
4	12th Dec. 2015, 10.00 AM	At- Village Primary School Village- Muthalipalayam District- Tiruppur State- Tamil Nadu	Total 50 persons including Panchayat President & members, Panchayat Council Members and interested villagers/ general public attended
5	16th Dec. 2015, 3.00 PM	At- Grampanchayat Community Hall, Village- Arasampalayam District- Coimbatore, State- Tamil Nadu	Total 25 persons including Village heads, interested villagers/ general public attended

The number of the people who attended the meetings in every village where the consultations took place according to the documents provided by the POWERGRID in their IEER report are not at all representative of the opinion of the people getting, affected. It is also a point to be noted that the women groups who actively participated in the consultations do not have their names on the official records or even the report of POWERGRID for that matter.

Kitichami from Padyachipuruvillage in Udumalpet who is a farmer said there are multiple lines going to Kerala and Arasur and are coming from Nevelli and no consultation ever took place for any previous or now upcoming lines.

P. Rani from Periyapapanuthur said that there was no compensation provided for the old lines in their area nor were there any consultations which took place. Kanagaraja who is the vice chairman of Arasampalayam panchayat(where the consultation has been claimed to be conducted) said that around 1 or 1 and a half years back people from Powergrid tried to mobilize people for consultation but the people refused to come to the meeting as they were against these lines because the lines have adverse agricultural effects. As a consequence, the meeting got canceled.

Out of all the places where consultation was claimed to be organized as mentioned in the POWERGRID's IEER report, **Moothalipalayam** had its own story to tell. In Powergrid documents, the consultation took place in this village but the Panchayat Secretary, Rajashekharan, President, P. Vishwalingaswami, and others like assistant engineer have said that no such consultations have ever taken place. The secretary is working in this particular panchayat since past 12 years and he isn't aware of any such consultation taking place in the recent past. They were appalled to know from us that on paper such a consultation has been claimed to be conducted.

In the panchayat, at least there have to be 300 people present as a quorum to consider any decision to be followed by approval by the panchayat.

Even if the panchayat hasn't conducted the consultation, they don't remember anyone else conducting it. They said that they can't do any activity in the field if two lines cross at the same place. Areas, where lines are proposed to be placed, are agricultural lands. They said they are against putting transmission lines and are also not aware of this project coming up.

Till now there is no intimation about the upcoming projects in the area and even if people were asked whether they would give their lands for the construction of

transmission lines they were clearly refusing.

These accounts of people from the area go on to establish that the authorities are least concerned about the procedures and rules. There is no consideration for those impacted most severely by the project and public consultations are reduced to a mere sham on paper to remove the roadblocks to go ahead with the Project at any cost.

### **3. Impact on livestock/cattle:**

Livestock and cattle are an integral part of rural economies and go hand in hand with agricultural practices. There are frequent fires in the areas from where the transmission lines pass which on many occasions has burnt the feed for the livestock leading to their starvation causing death. This area is already a rain deficient patch and agriculture is totally dependent on the arrival of monsoon. People cannot anyways cultivate the land because of the earthing issues and fire burning the feed for livestock increases their problem manifold.

POWERGRID who is the implementing agency has not made any mention about the losses to livestock and their feed as a consequence of the post-transmission lines effects and doesn't have any mechanism in place to hear and decide on such problems and provide adequate compensation. Howsoever small, this problem may seem to the authorities it is one of the concerns of livelihood of the local inhabitants.

### **4. Health and safety:**

This Project has been given the status of category 'B' according to the Asia Infrastructure and Investment Bank's (AIIB) Environment and Social Policy as given in the Initial Environmental Examination report. This is so done because the impacts of the Project are considered temporary in nature and not severe in the form to qualify for utmost care and precaution to be taken.

It is practically impossible to infer that the transmission lines carrying high voltage current will not have any health and safety hazards. Sure the electricity is transmitted and made available for multiple purposes, but it comes at a cost, which is borne by the local people who live in its vicinity. The proximity effect plays its part on the health of the people in the way that it has adverse impacts because of the electromagnetic fields. It causes noise pollution that leads to annoyance in humans as well as animals. While there are no particular health-related problems which establish an immediate nexus with the vicinity of the

transmission lines, many countries across the globe prescribe certain restrictions as precautionary measures on the proximity of human habitations from these lines.

There are a lot of safety precautions that are to be taken by the locals in order to save themselves from causing any permanent or temporary damages to their body or internal system. As a matter of fact, people suffer from electric shocks every now and then when they are around these fields where the transmission lines are passing or the towers are erected.

## **5. Protests:**

This is not the first ever transmission line that is being erected in this area. People have already witnessed the adversities of such projects. People have in different areas started protesting the manner in which these lines are being erected without any prior knowledge of or consultation with people. There have been instances where people have approached the courts against the transmission lines being erected

Kanagaraja who is the vice chairman of **Arasampalayam** panchayat said that farmers protested when the Powergrid officials tried to mobilize people for consultations. For transmission lines, the officials asked 100 meters of land to be left empty around the transmission lines on each side. But the farmers are against this proposal since most of them are small landholders and almost half or the whole of their land would be gone in this process. People in Arasampalayam were not willing to give any information regarding the transmission lines project and said that they don't know anything about it and were also reluctant to reveal their names. The reasons for their reluctance could be fear or could be the fact that they actually don't know anything about the Project and the transmission lines. In both cases, it reflects poorly on the authorities for intimidating the locals and also not giving information regarding the Project.

### **The flawed rationale of the Project:**

The sole purpose of the Project as claimed is to provide power to the southern region of the country by using foreign aid from AIIB and ADB for financing almost 50% of the Project costs. It is time to look at such projects to overcome the power deficiencies in the southern region.

## **Tamil Nadu: A Power Surplus State**

Tamil Nadu is one of the power surplus states in India and has the maximum amount of sources of renewable energy to be exploited and deployed for the purposes of power generation. It is the state with the largest energy surplus of 11,649 million units in 2016-17 in the country. The peak demand as on May 2017 at about 15,000 MW and is now ranging at about 13,000 MW, according to data provided by the utility, the public sector Tangedco (Tamil Nadu Generation and Distribution Corporation). It has on hand a generation capacity of about 18,100 MW from multiple sources.

Moreover, the state has also installed infrastructure in order to harness wind and solar energy for electricity generation. This advantage of the state is because of its geographic location in the tropical region on the globe. Tamil Nadu has high wind potential due to the tunneling effect during the South East monsoons.

According to the latest government records, Tamil Nadu had the highest installed capacity of grid-connected renewable power (9448.68 MW) mainly on account of wind power. The government of Tamil Nadu is also supporting renewable energy options by taking proactive steps to tap various sources of energy through policy framework and research. Total renewable energy here (in Tamil Nadu) is 720,000 MW including grid connected and off-grid power, according to World Institute of Sustainable Energy (WISE).

While possessing such powerful infrastructure in the renewable energy sector in our backyard, it seems quite frivolous to have Projects like the one at hand because this Project will transmit generate and transmit energy produced from the thermal source i.e., coal which is a fossil fuel and is also considered as the main constituent of polluting the environment.

## **Transmission Losses in India**

Transmission losses in the power sector are one of the most important concerns as electricity cannot be stored for a very long time. Transmission loss is the difference between the power incident and transfer downstream. While transmitting it from the place of generation to the place of requirement, there is a certain amount of energy depending on multiple factors like technical and nontechnical (commercial losses). Technical factors are the type of equipment used in the transmission process, the length of the transmission lines, inadequate size of conductors etc. Nontechnical or commercial factors responsible for transmission losses are pilferage by hooking and tampering with the meters, theft of electricity, collection inefficiency etc. commercial losses i.e., the nontechnical losses are the prime reason for the financial distress of discoms.

In India, average T & D (transmission and distribution) losses; have been officially

indicated as 23% of the electricity generated. However, as per sample studies carried out by independent agencies including TERI (The Energy and Resource Institute, India), these losses have been estimated to be as high as 50% in some states. The losses in any system would, however, depend on the pattern of energy use, intensity of load demand, load density, and capability and configuration of the transmission and distribution system that vary for various system elements.

The percentage of transmission losses currently in India is 22.77% (23% approx.) according to a report of Central Electricity Authority under the Ministry of Power, Government of India published in January 2017.

In the present project, the lines are to come all the way from Raigarh located in the state of Chhatisgarh to Thrissur, Kerala. This will lead to major transmission losses, technical as well as commercial. Losses at different stages of the Project will also occur as transmission losses (400kv/200kv/132kv/66kv), sub-transmission losses (33kv/11kv) and distribution losses (11kv/0.4kv).

Decentralised energy is one of the key solutions to transmission losses. As the name suggests, it means to produce close to where it will be used, rather than at a large plant elsewhere and sent through the national grid. This local generation reduces transmission losses and lowers carbon emissions. In a country with such a thick density of population that is largely dependent on the land for social economic needs, these projects hardly make any social or developmental sense. Rather these projects are badly planned and assessed both in terms of its need and impacts on local communities and environment.

### **Conclusion:**

It is quite evident that on records everything looks perfect and in place but in reality things are far more complicated and out of place. The IEER report itself has certain inherent flaws. The mention of women groups being consulted has been made multiple times but not even once the name of those groups has been mentioned anywhere. In fact, the consultation has turned out to be a big sham and have not taken place let alone addressing the queries of the people. Transmission lines and towers carrying electricity of such high voltage have adverse consequences on the people. These lines impact the agricultural fields and the farmers cannot cultivate anything there as they majorly interfere with the farming process. Placement of these towers transmitting electricity has also diminished the value of the land in terms of economic value affecting

it as an asset and turning into a liability. Even the fertility of the land is reduced as no cultivation can take place and when the land is left in the hands of nature, it turns into a wasteland.

It is reported at many times that electric shocks from the transmission lines are fatal to one's health and their multiplicity can lead to interference with the central nervous system and death too depending upon the frequency and intensity of the shock(s) received. Earthing problem is the most common one in the vicinity of towers and lines. The constant buzzing or humming noise coming out of the lines is an irritant and causes annoyance and fear to the people.

In this particular project, the towers, which are desired to be placed, are lattice towers. The world is equipped with better technology has come up with the use of steel pole towers for transmission lines which have reduced the quantifiable impact on agriculture as compared to the former.

There is a hydropower station at Kadamparai in Kerala that also is used for electricity generation. In Edeyarpalayam, there are vast tracks of lands that have been converted into wind energy farms. Tamil Nadu is already a power surplus state with a huge area dedicated to renewable sources of energy like windmills and solar power plants. It makes more sense to use them and has such systems that, cause minimum distress to the inhabitants of these places. It would be wise to increase the effectiveness of the already existing plants instead of sanctioning new projects that harm the public at large and use the dirty fossil fuel coal responsible for pollution, global warming and climate change.

AIIB i.e. Asian Infrastructure and Investment Bank and ADB i.e. Asian Development Bank have claimed to not invest in dirty fuels and promote green energy initiative by reflecting them in their actions but, supporting these transmission lines is also a way to support coal since these lines transfer electricity generated by coal-based thermal power projects.

The Transmission System Strengthening Project is a project to expand the interstate transmission network in western and southern India. The project, partly funded by ADB and AIIB (as co-financer) along with the Power Grid Corporation of India Limited, has serious environmental and social consequences — like the loss of livelihood, impact on agriculture— which has been completely overlooked. The case study shows how MDBs are finding new and indirect ways to continue supporting coal, in violation of their commitment to reduce and in some cases not support coal at all.



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