



Social impact of the project 'conversion of coal fired industries to oil fired ones' on the industry stakeholders and neighbourhood population

***a sub-project under WBPCB-ICEF Project
Pollution Prevention and Waste Minimisation for Small Scale
Industrial Units in Kolkata Metropolis Area***

implemented by
Environment Governed Integrated Organisation (EnGIO), Kolkata

EXECUTIVE SUMMARY

Being one of the oldest cities of the region, the city of Kolkata has experienced decades of rapid and unplanned urbanization. Consequently, the citizens of the city are faced with the double burden of traditional as well as modern environmental risks and hazards to health.

Though air pollution is only one of the many environmental hazards in urban centers across the world, it is perceived as the unique problem as it affects every resident and seen and felt by every resident.

Kolkata is no exception. Historically apart from the vehicles, industries contribute significantly in the overall air pollution of the city. The emission from the industries – more than 8800 units exist within KMC according to a Kolkata Metropolitan Development study - often located within densely populated residential areas (many of the industries were actually established before the population explosion took place in city since 1970s) have always proved to be a genuine concern for all stakeholders including neighbourhood population.

Although the environmental problems of large and medium industries in the city were addressed effectively by the State Pollution Control Board as well as State Government, the small scale industries remain to be an enigma due to combination of reasons ranging from the non point nature of the air pollution to socio economics as the livelihoods of lakhs of people are dependent on these units. However the importance of such industrial units in context to city's overall pollution load can not be underestimated as these small industries were found to contribute about 44% to the overall particulate load vis-à-vis the city's industrial pollution. Most of these units use age -old, energy inefficient coal fired installations for manufacturing processes. The installations like boilers, kilns generally were used to operate without any effective pollution controlling device and more often than not, emitted belching black smoke from the chimneys. As a consequence they not only tended to affect the quality of life of stakeholders like workers and immediate neighbourhood, but more importantly affected the overall air quality of the city significantly, if one takes into account the cumulative pollution potential of hundreds of industries falling within small sector category.

With this background, West Bengal Pollution Control Board conceived and prepared the project to convert coal fire to oil fire in these small industries. The project was subsequently approved by 'India Canada Environment Facility' (ICEF). According to project outline, 50% of the cost entailed for this conversion will be borne by the owner, 25% by the WBPCB and rest 25% by the ICEF.

The project, presently in varying stages of application vis-à-vis different industries, is however not only all about technological switch but also has a very important social perspective. For that matter the long time viability and sustainability of any such project depends on its social acceptance.

More so, in case of the industries like those in small scale sector falling within Kolkata city, as the society at large is intricately involved with such industries being predominantly labour intensive ones.

With this background the current study - *Social impact of the project conversion of coal fired industries to oil fired ones on the industry stakeholders and neighbourhood population* - has been undertaken, assigned by India Canada Environment Facility (ICEF) and West Bengal Pollution Control Board (WBPCB), as it is felt that the results/ findings of the same may contribute significantly in better understanding of the social dimensions/ components relevant to the project and if possible improving them leading to the social attestation of the project in greater degree apart from giving important social inputs to the planners and decision makers interested to replicate the model.

The broad macro objective of the undertaken project is to assess the overall social impacts and responses of various stakeholders to the fuel shift – coal to oil in running the boilers / kilns – as made imperative for the small and medium industries within KMC area and in its fringe by West Bengal Pollution Control Board.

The selection of sample industries for primary survey – 58 in all (list annexed in detailed report) – has been done in consultation with the WBPCB following the stratified sampling technique method ensuring the proportional representation of all variables. The secondary information about the industries was obtained from WBPCB.

Primary data is generated within the stakeholders using various methods including questionnaire based survey, interviews and focused group discussions. The questionnaires have been finalized after a pretesting done on 8 (eight) industries. The results of pretesting have been presented in front of both ICEF team and as well as the senior functionaries of the state board. Based on the feedback the interaction models with various stakeholders have been finalized and implemented for detailed survey.

The data, as generated following the methodology mentioned above, have been documented, cleansed and subsequently analysed through the 'impact assessment matrix method'. Both the impacts at individual industry level as well as in overall context have been assessed after giving due weightages to the selected parameters vis-à-vis the study.

The responses of various stakeholders to the coal to oil shift has also been assessed through the same method.

The analysis of the overall impact vis-à-vis coal to oil shift within small and medium industries in and around Kolkata clearly shows that the technological change has actually catalysed an irreversible social change within the stakeholder population.

Incidentally all the analysed industries have shown broadly a positive impact towards the fuel shift (as indicated a gross index of +49.3 % in a scale of -100 % to +100 %), though individual industry types have shown variable impacts.

Considering all the industry categories together it is evident from the social impact index scores that the impact has been most impressive within Ceramic Industries (obtained score is 67.63% of the max score possible), followed by 'Other' Industry categories - including, Health Care Unit, Chemical Industries, Carbon Paper Industry, Pharmaceutical Industries, Paper Industries & Organic Manure Industry - (obtained score is 49.45% of the max score

possible) and Rubber Industries (obtained score is 48.36% of the max score possible). All the scores are calculated within a range of -100% to +100%.

On the other hand the impacts have been comparatively poor within Plywood Industries which secured the percentage score of 42.18 and the Bleaching & Dyeing Industries are documented to be worst off among all the industry categories (obtained score is 39.43%).

Clearly the impacts have been perceived at the level of market forces. Ceramic industries, which have documented a significant production increase since the fuel shift (actually the fuel shift has contributed as it ensured better quality and less wastage and thus better competitiveness), have reported quiet positive social impact.

As far the social responses are concerned, the same has been assessed within various stakeholders related to the project. The primary stakeholders analysed are owners / management representatives; boiler operators; other workers; neighbourhood people and families of boiler operators.

However the responses of the secondary stakeholders like regulators; people representatives and local doctors are also documented to get a holistic perception regarding the view of the society *per se* towards the project.

Apparently most of the industry owners have a prefix mindset about the fuel shift, only taking into consideration the respective fuel prices; not bothering even to compare the overall economic aspects set aside the environmental and health considerations associated with the project. It seems that they are in general not properly aware and / or insensitive to the causes of their workers as well as the larger society. On the other hand the workers (including boiler operators) have appreciated the change wholeheartedly in spite of their lack of awareness regarding the harmful potential of working with coal fired boilers as they could feel the difference at the core of their lungs. The families of boiler operators have however relatively less euphoric regarding the change not because they are not appreciative of the change but because most of them are not really aware of the regular stress their relatives while operating the coal fired boilers. The females tend to be more concerned within the family members, some even appreciating the change in the quality of life post fuel shift. The neighbourhoods in general, are very favourable to the change though the same may not have reflected in terms of parameter like 'trend of environmental complaint, because many of them have actually learned to live with the pollution for various reasons including the socio-economics.

Coming to indirect stakeholders, the doctors practicing in these areas have heralded the project though generally have feelings that it will take few years time to appreciate the affect at the level of personal health of the target populace.

The people's representatives of the industrial areas (viz. wards 56, 58, 66 within KMC and Kamarhati Municipality), where the fuel shift project has been implemented, when questioned about the project were found to be partially aware of it, not having any detailed information regarding the project.

The regulators on the other hand are quite happy with the outcomes of the project as their aim to reduce the particulate emission from small scale industries has been achieved fully.

Through the findings from the study certain emergent issues have evolved. Some of the major issues could be listed as *improvement in environment, lack of awareness about quality of life including health, requirement of greater awareness within industries and neighbourhood, need of comprehensive economic assessment and counseling, requirement of general interactive platform with provision of sharing experience between various*

stakeholders, replicability of the project with provision of more consultative involving peoples representatives, concept of LDO pumps, fuel wastage reduction, increase in fuel cost catalyzing the streamlining of activities, concept of green tax, inflammability of fuel and boiler maintenance.

Certain indicators have also emerged out of the study which may be useful to ensure the sustainability of the fuel shift project. The indicators are viz. *people monitoring mechanism, involvement of NGOs, surprise monitoring by regulatory agency and analyses of operative indicator matrix.*