

PUNJAB STATE ELECTRICITY REGULATORY COMMISSION
SCO 220-21, SECTOR – 34-A, CHANDIGARH

Petition No. 64 of 2013
Date of Order: 22.05.2014

In the matter of: Regulation 22 of the Punjab State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2005 as amended by Punjab State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff), second amendment Regulations, 2012 notified vide Notification dated 17th September, 2012.

AND

Approval of Capital Expenditure exceeding Rs. 20 Crore for the Transmission Schemes to be executed by PSTCL for system improvement and power dispersal.

In the matter of : Punjab State Transmission Corporation Limited, The Mall, Patiala-147001.

Present: Smt. Romila Dubey, Chairperson.
Er. Virinder Singh, Member.
Er. Gurinder Jit Singh, Member.

ORDER:

Punjab State Transmission Corporation Limited (PSTCL) filed this petition for seeking approval of the Commission for its investment proposal in Transmission Schemes, with Capital Expenditure exceeding Rs. 20 Crore, in terms of Regulation 22 (6) (ii) of Punjab State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2005, as amended vide second amendment notified vide Notification dated 17th September, 2012. The schemes required for System Improvement and Power Dispersal as per petition are as under:-

(I) 220 kV Sub-Station Bhari (upgradation from 66 kV Sub-Station)

1x160 MVA, 220/66 kV Transformer along with 220 kV Amloh(400 kV)-Bhari DC line- 40 Km/0.5 sq. inch ACSR and allied works.

(II) 220 kV Sub-Station Hoshiarpur (upgradation from 132 kV Sub-Station)

1x160 MVA, 220/66 kV Transformer along with LILO of both 220 kV circuits of Nakodar (400 kV)-Rehana Jattan DC line at 220 kV Sub-Station Hoshiarpur-35 Km/0.4 sq. inch ACSR and allied works.

(III) 220 kV Sub-Station Majra (upgradation from 66 kV Sub-Station)

1 x 100 MVA, 220/66 kV Transformer along with

(a) 220 kV Rajpura (400 kV)-Majra DC line- 30 Km/0.4 sq. inch ACSR + 16 Km, on multi circuit towers.

(b) 220 kV Bassi Pathana-Majra DC line-19 Km/0.4 sq. inch ACSR+ 16 Km on multi circuit towers.

(c) Multi circuit line (2xDC) for extending 220 kV, DC lines at (a) and (b) above – 16 Km/0.4 sq. inch ACSR.

1. The Petition was admitted vide order dated 27.12.2013. After scrutiny of the petition, the Commission observed as under:

“(i) Investment approval for establishment of 400 kV Sub-Station Amloh has not been sought from the Commission. How it would be possible to erect 400 kV Amloh-220 kV Bhari DC Line?”

“(ii) Justify the establishment of new 220 kV Sub-Station Bhari because there are reports in the press that many industries have closed at Gobindgarh and surrounding areas resulting into reduction/disconnection of loads. This area already has 220 kV Sub-Stations at Gobindgarh-I, Gobindgarh-II, Amloh, Ikolaha, Bassi Pathana, Amloh Road, Gobindgarh etc. Will it not be possible to feed loads proposed to be fed from 220 kV Sub-Station Bhari from any of these existing 220 kV Sub-Stations?”

“(iii) Load flow studies of 132 kV and above system of Punjab with these three Sub-Stations corresponding to maximum thermal, maximum Hydro and Peak paddy season corresponding to the year of commissioning of these Sub-Stations should be supplied.”

Generation and Load schedules considered in these studies should also be supplied.

- (iv) It should be certified that 66 kV loads proposed to be fed from proposed three 220 kV Sub-Stations cannot be fed from existing 132 kV/220 kV Sub-Stations surrounding these proposed 220 kV Sub-Stations.*
- (v) Complete sketches of proposed 220 kV Sub-Stations along with feeding 66 kV Sub-Stations and their load demand should be supplied.*
- (vi) Complete map of existing/planned Transmission System (132 kV & above) of Punjab State may also be supplied.”*

2. PSTCL was directed vide order dated 27.12.2013 to file reply to the above observations made by the Commission by 10.01.2014, with a copy to PSPCL. PSPCL was made respondent in this petition and was directed to file its response to the petition by 14.01.2014, with advance copy to PSTCL.

PSTCL filed its pointwise reply vide letter dated 10.01.2014 to the observations of the Commission as under:

- (i) Keeping in view evacuation of power from Talwandi Sabo (3x660 MW) TPS, Rajpura (2x700 MW) TPS, idea of creating 400kV was conceived, being technically feasible, during 2008. At that time, there was no existing procedure of getting investment approval from the Commission. However, administrative approval of 2012-17 transmission works (tentative) was given by B.O.D in its 13th meeting held on 23.04.2012 and accordingly planning list for 2012-17 was issued vide memo no. 114/116 dated 16.05.2012. The scope of work was further amended vide amendment no. 95 dated 13.02.2013, in view of another 1320 MW Mukerian TPS coming in state sector. Later on, in view of the uncertainty of Gidderbaha TPS, Mansa TPS and augmentations of Rajpura TPS and Talwandi Sabo

TPS with additional units, the scope of transmission works was again amended vide letter no. 813 dated 26.09.2013.

- (ii) As the matter relates to PSPCL, therefore PSPCL has been requested to supply the requisite information.
- (iii) Load Flow Study reports of 132 kV and above system including proposed three Sub-Stations for the following scenarios have been supplied:
 - (a) Study corresponding to State's winter load of year 2017 (minimum load) (i.e. December- February) with maximum Thermal Generation (80% availability).
 - (b) Study corresponding to State's paddy load of year 2017 i.e. maximum load (June-September) with maximum Thermal & Hydel Generation (70% availabilities).
 - (c) Study corresponding to State Monsoon load of year 2017 i.e. September to October with maximum Thermal & Hydel generation (90% availability).
- (iv)&(v) PSPCL to supply the information.
- (vi) Complete map of existing/planned Transmission system (132 kV & above) of Punjab has been supplied.

3. PSPCL also filed its reply vide Chief Engineer/ARR&TR memo no. 5070 dated 16.01.2014 as under:

- (i) 220 kV Sub-Station Bhari (proposed).

85 MW load in Gobindgarh and Khanna Divisions has been surrendered, which is about 5.5% of the total connected load, Due to recession in the market, maximum demand has been reduced as industry is running only one shift of 8 hours. Due to less tariff in the night, maximum industry run in the night shifts only. The basic reason for reduction in maximum demand is recession in the industry and not due to permanent disconnection.

- (ii) 220 kV Sub-Station Majra (proposed).

Metro Railways, Chandigarh & large number of Mega Housing Projects/other Projects are expected in Chandigarh/Mullanpur Planning Area. Some of the upcoming Projects namely Hyde Park DLF (9852 kW load), Omaxe Ltd. Chandigarh Extension, Mullanpur (Approx. 46.899 MVA load), IAS/PCS society, Mullanpur (9852 kW load), Tata Memorial Cancer Hospital etc. would require power in very near future, which can be easily fed only from the proposed 220 kV Sub-Station, Majra. Also, 66 kV Sub-Station Mullanpur and 66 kV Sub-Station Seonk (proposed) can be fed from proposed 220 kV Sub-Station Majra.

(iii) 220 kV Sub-Station Hoshiarpur (proposed).

The load of the proposed 4 number 66 kV Grid Sub-Stations to be constructed under R-APDRP (Part B) scheme shall also be fed from proposed 220 kV Sub-Station Hoshiarpur.

(iv) Govt. of Punjab has formulated new Industrial Policy to attract the investment in the State which will lead to growth in industrial load and hosted its first Progressive Punjab Investors Summit on 9th & 10th December 2013 at Chandigarh and MOUs of Rs. 65,000 crore have been signed to attract the investment in Punjab. This Summit has proposed lot of investment in the State with host of fiscal incentives being granted to the investors. This would require robust infrastructure such as Roads, Power, Transportation etc. These Sub-Stations are located in the growing areas of Punjab and these upgradations/proposals of the Sub-Stations would help to achieve this objective.

4. PSTCL submitted the following additional information vide memo no. 178 dated 20.01.2014:

(i) Detailed justification of 400 kV Sub-Station Amloh and 400 kV Sub-Station Doraha.

(ii) Mandi Gobindgarh area is an industrial area and is very much congested. Presently 66 kV lines in the area are overloaded. No

additional 66 kV line can be erected nor any new 66 kV Sub-Station can be erected due to space constraints. Although, there may be a cushion of additional power available at the nearby 220 kV Sub-Stations, but the same cannot be utilized due to overloaded 66 kV lines. Under such conditions, some relief to the 66 kV system can be provided by up grading the existing 66 kV Sub-Station Bhari to 220 kV level.

(iii) 220 kV Sub-Station Majra has been planned mainly as per the requirement of U.T. Chandigarh for providing power supply to Metro Railway at Chandigarh. In addition to it, some of 66 kV Sub-Stations of PSPCL will also be catered through this Sub-Station. A total of six number options were studied for providing its 220 kV connectivity. Out of these options, PSTCL has recommended the following option to be considered on account of minimum transmission losses :

(a) 220 kV Rajpura (400 kV)-Majra DC (48 Km)

(b) 220 kV Bassi Pathana-Majra DC (35 Km)

(iv) 220 kV Sub-Station Hoshiarpur (upgradation from 132 kV or at new location) has been planned with 1 x 160 MVA, 220/66 kV Transformer in view of over loading of existing 132 kV system of the area. Its 220 kV connectivity from existing 220 kV Sub-Station Mahilpur cannot be considered because of overloading constraints of 220 kV Bhakra- Mahilpur DC line. During paddy, 2013, its loading was recorded at 104.8%. So, LILO of another 400 kV Nakodar – 220 kV Rehana Jattan line (which passes closer to proposed Sub-Station) has been planned. With the commissioning of this Sub-Station, approx. load of 80-85 MVA at 66 kV of 132 kV Sub-Station Hoshiarpur will be shifted on 220/66 kV Transformers, thereby providing considerable relief to the existing 132 kV system of the area. This Sub-Station will also give relief to 220 kV Transformer at Mahilpur (which at present is loaded to 198.5 MVA against 200

MVA installed capacity), as well as loading of 220 kV Bhakra-Mahilpur DC line.

- (v) Power maps of Punjab for 132 kV and above proposed system up to the year 2017, duly marked with active and reactive power flows for three different scenario as Paddy, Winter and Monsoon have been supplied.
 - (vi) PSPCL has been asked to certify that loads proposed to be fed from these Sub-Stations cannot be fed from existing 132 kV/220 kV Sub-Stations and to supply the sketch of connecting 66 kV Sub-Stations and their load demands.
5. During hearing on 21.01.2014, PSTCL was directed vide order dated 23.01.2014 to file rejoinder to the reply of PSPCL by 13.02.2014, with a copy to PSPCL.
6. On the next date of hearing i.e. 18.02.2014, PSTCL made oral submission that they have nothing to say on the written submissions made by PSPCL. The Commission vide its order dated 24.02.2014 observed as under:

“PSTCL has not taken investment approval for creation of 400 kV Sub-Station Amlah. As such, laying of 220 kV DC line from this Sub-Station to feed proposed 220 kV Sub-Station Bhari cannot be allowed. The possibility of feeding this Sub-Station by LILO of one circuit of 220 kV Ganguwal-Gobindgarh line or 220 kV GGSSTP-Gobindgarh line should be examined. Moreover, 400 kV Sub-Station Amlah is required for evacuation of power from proposed thermal plant at Mukerian. This should be covered as and when this project comes.

The possibility of feeding proposed 220 kV Sub-Station Majra by LILO of one circuit of 220 kV Ganguwal-Mohali line or 220 kV GGSSTP- Mohali line should also be examined to save cost of feeding lines proposed in the petition.

The feeding of 220 kV proposed Sub-Station Hoshiarpur by laying 220 kV radial line from Rehana Jattan instead of LILO of 220 kV Rehana Jattan-Nakodar DC line also needs examination.

The under loading of different circuits may be mentioned to put the things on record.

Any other economical proposal apart from above can also be given.”

The reply to above observations was to be submitted by PSTCL by 12.03.2014.

7. PSTCL filed its reply to the observations of the Commission vide letter dated 11.03.2014 as under:

- (i) 220 kV Sub-Stations Majra, Bhari and Hoshiarpur have been planned by PSTCL in view of load growth/new loads coming in the area. PSPCL has also ensured its evacuation/adequacy at 66 kV level.
- (ii) 220 kV Sub-Station Bhari was planned to give relief to the associated 66 kV system of Gobindgarh area. Based on the load flow study, its 220 kV connectivity was planned from independent 400 kV source i.e. 400 kV Sub-Station Amloh, so as to keep the loading of existing 220 kV system of the area undisturbed. As per Commission's order dated 24.02.2014, 400 kV Amloh Sub-Station is to be covered as and when Mukerian Thermal Project comes. Therefore, three number alternative options of feeding 220 kV Sub-Station Bhari have been studied and concluded that these alternative options for feeding 220 kV Sub-Station Bhari although qualify the base case, but are not withstanding the contingent conditions. In view of pendency of 400 kV Sub-Station Amloh, if any of the above alternative options are considered, some load restrictions on 220 kV lines of the area will have to be maintained.
- (iii) 220 kV Sub-Station Majra was planned mainly in view of the Metro Railway Project of UT. From this Sub-Station, some 66 kV loads of

nearby area shall also be supplied. Keeping in view its reliability, 220 kV connectivity was planned from two different sources as :

- (a) 220 kV Majra-Bassi Pathana DC line with 0.4 sq. inch conductor Size, Length = 35 Km.
 - (b) 220 kV Majra – Rajpura (400 kV) DC line with 0.4 sq. inch conductor size, Length = 48 Km.
- (iv) As per Commission's order dated 24.02.2014, case of 220 kV Majra has further been studied for following two number additional options as under:

- (a) LILO of 220 kV Ganguwal – Mohali-1, one circuit at proposed 220 kV Majra.

LILO length = 10 Km, out of which 6 Km will be DC & 4 Km will be on multi circuit towers.

Right of Way = Available

- (b) LILO of 220 kV GGSSTP – Mohali line at proposed 220 kV Sub-Station Majra:

LILO length = 14 Km

Right of Way = Available

If these cost saving options are considered, then some line loading restrictions under certain conditions on some of the 220 kV lines of the area will also have to be imposed for system operation.

- (v) 220 kV Sub-Station Hoshiarpur was planned in view of controlling the overloading of auto Transformers installed at 220 kV Sub-Station Mahilpur, as well as the overloading of 220 kV Bhakra-Mahilpur DC line. Its 220 kV connectivity has been proposed as LILO of 400 kV Nakodar-220 kV Rehana Jattan (both circuits) at proposed 220 KV Sub-Station Hoshiarpur. Earlier its LILO length was given as approximately 35 Km. Now as per the latest information from field office, because of space constraints of line, 220 kV Sub-Station Hoshiarpur is going to be erected at new place

instead of up gradation of existing 132 kV Sub-Station Hoshiarpur. New location of 220 kV Sub-Station, Hoshiarpur has been identified and finalized somewhere in village Kari Bari in the nearby area. Accordingly, as per the new location of the Sub-Station, LILO of 400 kV Nakodar – 220 kV Rehana Jattan at proposed Hoshiarpur Sub-Station (new location) has been reduced to 18 Km (approx.), whereas 220 kV line from 220 kV Rehana Jattan to 220 kV Hoshiarpur (new) will also be 18 Km (approx).

- (vi) In view of this, whether LILO of 400 kV Nakodar – 220 kV Rehana Jattan at 220 kV Hoshiarpur (new location) is made or a 220 kV Rehana Jattan – 220 kV Hoshiarpur (new) DC link is erected, length will be the same in both the cases. Line length has been reduced comparatively with this new location. However, the option of laying 220 kV radial line from 220 kV Rehana Jattan instead of LILO of 220 kV Rehana Jattan – 400 kV Nakodar DC line has also been studied. The output of the case shows that flows in the various 220 kV lines are normal under normal conditions.

Flows on the adjacent lines remain within the permissible limits, under the above contingent conditions.

8. After examining the reply of PSTCL dated 11.03.2014, the Commission vide its order dated 19.03.2014, observed as under.

- “(i) Load flow studies have been carried out for the year 2012-13. It should have been carried out for the year of commissioning of respective Sub-Stations.*
- (ii) Load flow studies for N-1 contingency have been carried out for different alternatives available for connectivity of proposed Sub-Stations. Similar load flow studies should also be carried out for N-1 contingency without taking into account the proposed alternatives of connectivity of proposed Sub-Stations.*
- (iii) Load flows have been given on CD. It should be marked on a Map of Punjab showing 132 kV and above network.*

- (iv) *As per memo no. 178 dated 20.01.2014, PSTCL had submitted that right of way is not available for LILO of 220 kV GGSSTP – Mohali line at Majra and LILO length is 16 Km but as per memo no. 637 dated 11.03.2014, PSTCL has now submitted that right of way is available and LILO length is 14 Km. Correct position shall be brought out explaining the contradiction.”*

PSTCL was directed to reply to the observations by 01.04.2014 with copy to PSPCL.

9. PSTCL vide letter dated 28.03.2014 filed point wise reply to the observations of the Commission as under:

- (i) Load Flow Studies have been carried out corresponding to year 2017 system conditions, and not for the year 2012-13 system conditions as mentioned in the order. However, the year 2012-13 as appearing in the various output reports is due to the reason that originally when the work was started in the software, the file name was for the year 2012-13 which has later been updated and brought to year 2017 system conditions, through addition of new Sub-Stations/up gradations/augmentations along with the transmission lines. As it is not possible to prepare a new data file for each and every year, therefore, updation of the existing file is done for arriving at the new/desired system conditions. It was further added that although the subject cited Sub-Stations have been planned for the year 2014-15, but an approximate 2-2 ½ years time may require for the commissioning, including the time for completion of their respective transmission lines. The time period also includes the time required for statutory clearances, such as Railway crossing, road crossings and forest clearance etc. (commissioning period can further increase in case of court cases coming in the ‘Right of Way’ clearance of the line). Therefore, keeping in view all this, system study has been carried out on the basis of their tentative commissioning time i.e. 2016-17 loading conditions, as the proposed Sub-Stations and lines are expected in 2016-17.

- (ii) Planning of 220 kV/ 400 kV transmission works of PSTCL is being done in line with the guidelines of Transmission Planning Criteria of CEA. The system has also been studied without taking into account the proposed alternatives (i.e. Bhari, Majra and Hoshiarpur), with system loading condition of year 2017, and with full generation available from Talwandi Sabo (TPS), Rajpura (TPS) and Goindwal (TPS) along with available state owned Thermal and Hydel generating stations. This case was further tested for different N-1 contingencies.

Without 220 kV Sub-Station Bhari, 220 kV Sub-Station Hoshiarpur and 220 kV Sub-Station Majra, there exists overloading in the system, which further increases with various contingent conditions. MW flows without 220 kV Sub-Station Bhari, Hoshiarpur & Majra corresponding to year 2017 system condition duly marked on sheets attached.

- (iii) Power flows (MW,MVAR) on various 400 kV / 220 kV/ 132 kV lines of Punjab in the proposed system as well as in contingent conditions, are available in the output report. The soft copy stands submitted. As per the order of PSERC dated 19.03.2014, power flows for the proposed system including 220 kV Sub-Station Bhari, Hoshiarpur and Majra, along with proposed 400 kV system duly marked on the map is attached.
- (iv) The information in respect of “Right of Way” clearances, space availability for bays etc. was taken from concerned field offices. As confirmed from the TLSC office, the information provided vide letter no. 31 dated 17.01.2014 was actually for the non-availability of “Right of Way” for LILO of 220 kV Kharar – 220 kV Mohali – 1 line at Majra, but was inadvertently mentioned as LILO of 220 kV GGSSTP – 220 kV Mohali -1 at Majra.

10. During hearing of the petition on 07.04.2014, PSTCL submitted that it proposes to file amended/revised transmission schemes for system improvement and power dispersal for approval of capital

expenditure. PSTCL was directed vide order dated 09.04.2014 to file the same by 05.05.2014, with advance copy to PSPCL.

11. PSTCL submitted amended/revised schemes vide memo no 1073 dated 28.04.2014 as under:

(i) Regarding 220 kV Hoshiarpur Sub-Station, there is no change in the scheme and submissions/clarifications as already made vide PSTCL memo nos. 178 dated 20.01.2014 and 637 dated 11.03.2014 may be considered.

(ii) GMADA has also applied for an additional load of approx. 900 MVA in Mohali area. With this additional load, a drastic change has come in the loading scenario as well as loading of 400 kV/220 kV lines of Punjab. The proposed full load of GMADA cannot be catered through the existing setup of 220 kV network of PSTCL. Although a part of GMADA load requirement can be catered through proposed 220 kV Sub-Station Majra, but for the rest of the load, one 400 kV Sub-Station with 2 x 500 MVA, 400/220 kV ICTs along with two nos. new 220 kV Sub-Stations in Mohali area shall be required. Once the land is identified, its further evacuation system shall be planned accordingly. However, with the proposed 400 kV Sub-Station Mohali, along with its tentative 220 kV lines in circuit, the scope of work of 220 kV Sub-Station Majra as well as 220 kV Sub-Station Bhari has been reviewed as under:

(a) 220 kV Sub-Station Majra

Earlier 220 kV grid Sub-Station Majra, being a station for UT Metro Railways was planned with 1 x160 MVA, 220/66 kV Transformer. Its connectivity was planned from two different sources as:

(i) 400 kV Rajpura – proposed 220 kV Majra (DC) line, 48 Km with 0.4 sq. inch conductor size.

(ii) 220 kV Bassi Pathana – Proposed 220 kV Majra DC line, 35 Km with conductor size of 0.4 sq. inch.

Although load of proposed 220 kV Sub-Station Majra shall be reduced to 30-40 MVA only, but a part of GMADA load, approx. 100 MVA, can also be catered through this Sub-Station. Quantum of this load can be increased by providing additional 100 MVA/ 160MVA, 220/66 kV Transformer as per the future requirement of GMADA. However, the proposed 220 kV Sub-Station Majra shall now be shifted from “critical grid stations” category to an ordinary grid station category. Therefore, its 220 kV connectivity can also be amended with following options:

(i) 400 kV Rajpura – Proposed 220 kV Sub-Station Majra (DC) line, 48 Km with 0.4 sq. inch conductor.

(ii) 220 kV Bassi Pathana – 220 kV Majra (DC) line with 0.4 sq. inch conductor size

Line length = 35 Km

Right of Way = Available

(iii) LILO of 220 kV GGSSTP – 220 kV Mohali -1 at 220 kV Majra.

LILO length = 14 Km

Right of Way = Available

(iv) LILO of 220 kV Ganguwal – 220 kV Mohali – 1 at proposed 220 kV Majra.

LILO length = 10 Km

Right of Way = Available

Although option (iii) & (iv) are comparatively cheaper as far as cost factor is concerned, but can give trouble under various contingent conditions. On the other hand, option (i) is comparatively costlier than option (ii), (iii) & (iv), but it gives better loadings, both under the base case as well as under the contingent conditions.

(b) 220 kV Sub-Station Bhari:

With 400 kV new proposed Sub-Station in Mohali area having 2 x 500 MVA, 400 /220 kV ICTs, along with its 220 kV associated lines, and in the absence of 400 kV Sub-Station Amloh , 400 kV Sub-Station Mohali has been identified in place of 400 kV Sub-Station Amloh, 220 kV connectivity of proposed 220 kV Sub-Station Bhari can also be amended with following options:

(i) LILO of 220 kV GGSSTP – 220 kV Gobindgarh – 1 (one circuit) at proposed 220 kV Sub-Station, Bhari

LILO length = 5 Km

Right of Way = Available

(ii) LILO of 220 kV Ganguwal – 220 kV Gobindgarh – II (one circuit) at proposed 220 kV Sub-Station, Bhari

LILO length = 4 Km

Right of Way = Available

Both the options i.e. (i) & (ii) are equally good as far as loadings are concerned. However, option (ii) shall have the shorter line length of its 220 kV line.

12. During hearing of this petition on 13.05.2014, the Commission raised some queries and sought certain clarifications. PSTCL was directed to file the additional submissions in this regard after the hearing. The hearing of the case was closed and order was reserved. PSTCL filed the additional submissions vide letter no. Spl-1 dated 13.05.2014 and submitted as under:

(A) 220 kV Sub-Station Majra

(i) The total load expected to be fed from 220 kV Sub-Station Majra shall be of:

(a) Hyde Park	=	10.37 MVA
(b) OMAXE Ltd.	=	46.899 MVA
(c) JAS Society	=	6.447 MVA
(d) ECO City	=	23.948 MVA
Total	=	87.664 MVA

In addition to it, the existing load of 66 kV Sub-Stations Mullanpur and Majra (approx. 40 MVA) shall also be shifted on to this Sub-Station.

- (ii) Proposed 220 kV connectivity of 220 kV Majra with 1 x 160 MVA, 220/66 kV Transformer instead of 1x100 MVA, 220/66 kV Transformer already proposed may be considered/allowed as:

LILO of 220 kV Ganguwal – 220 kV Mohali I line at 220 kV Sub-Station Majra, being shortest length.

LILO length = 10 Km.

- (B) 220 kV Sub-Station Bhari

220 kV connectivity of proposed 220 kV Sub-Station Bhari may be considered/allowed as:

LILO of 220 kV Ganguwal- Gobindgarh line at 220 kV Sub-Station Bhari, being shortest length.

LILO length = 4 Km.

After examining the submissions made in the case by PSTCL and PSPCL, the Commission approves the schemes as under:

- (i) **220 kV Sub-Station Bhari (upgradation from 66 kV Sub-Station)**

1x160 MVA, 220/66 kV Transformer along with LILLO of one circuit of 220 kV Ganguwal- Gobindgarh-II line at 220 kV Sub-Station, Bhari and allied works. LILLO length = 4 Km.

(ii) 220 kV Sub-Station Hoshiarpur (New Site)

1x160 MVA, 220/66 kV Transformer along with LILO of one circuit of 220 kV Nakodar (400 kV)-Rehana Jattan Double Circuit (DC) line at 220 kV Sub-Station Hoshiarpur and allied works. LILO Length = 18 Km.

(iii) 220 kV Sub-Station Majra (upgradation from 66 kV Sub-Station)

1 x 160 MVA, 220/66 kV Transformer along with LILO of one circuit of 220 kV Ganguwal – Mohali (I) DC line at 220 kV Sub-Station, Majra and allied works. LILO Length = 10 Km.

However, PSTCL will ensure proper implementation of the schemes by following the laid down procedure for procurement of material/award of work and all the statutory clearances be obtained, wherever required.

PSTCL may also identify / plan transmission works required to meet with contingencies as per Transmission Planning Criteria of CEA and obtain investment approval of the Commission separately wherever required as per the regulations.

PSPCL shall ensure that all 66 kV works required for dispersal of power from these 220 kV Sub-Stations are planned and executed well in time so as to match their commissioning with the Commissioning of 220 kV Sub-Stations approved in this scheme.

The petition is disposed of accordingly.

Sd/-
(Gurinder Jit Singh)
Member

Sd/-
(Virinder Singh)
Member

Sd/-
(Romila Dubey)
Chairperson

Chandigarh

Dated: 22.05.2014