

Dated 31st August, 2017

Dear Sirs,

The entire approach presented in the Explanatory Memorandum is incorrect to select the correct method of planning and it would not achieve the desired results. Nowadays, the power generation scope (location of power generating stations) has become totally decentralised with the advent of cheap solar power plants without limited by availability of coal, gas, hydro power, etc., at a location. The only criteria are the demand for electricity (including future demand potential) in a location. The criteria shall be to generate maximum power locally from dedicated units (including storage if economically feasible), without involving long extra high voltage (EHV) transmission, by feeding each substation (33 kV and below) which is catering to ultimate consumers.

There should be 'feed in tariff' provision also available to the consumers to sell the excess power generated from their roof top solar power plants. Thus each substation directly connected by the nearby utility power generation plants (solar IPP, etc) would meet the demand on first right/preference basis. These sub-stations are not isolated and connected to the national grid to draw power when the dedicated power units generation is falling short of the demand. When the local generation is excess of the demand, the surplus power is exported to the high voltage substation /grid for use elsewhere. Thus each HV transmission line should have bidirectional power flow provision/possibility. Thus high voltage grid (above 33 KV) would pool the surplus power from each tail end sub-station to transmit to a nearby sub-station which is facing more demand in excess of local generation. Thus existing transmission lines are efficiently utilised at higher capacity factor and transmission losses are minimised fully as the transmission distances and transformation to high voltage/s is reduced.

The above planning exercise is the back end integration rather than presently followed forward integration. The length of high voltage transmission lines and the total substation capacity (MVA) in India is more than that in the USA which generates four times more electricity than in India. The maximum average capacity utilisation of HV substations is below 50% which is prevailing not more than few hours in a year to meet maximum ever met demand of 158,000 MW. There is lot of excess capacity in the existing power grid infrastructure which can be used to serve 150% of the maximum demand if the bottlenecks in the present grid infrastructure are identified and rectified to fully achieve the bidirectional flow capability up to 33 KV substations by renovating control and instrumentation in the substations wherever needed. PGCIL, by its company expansion goals, has natural vested interest not to achieve correct power grid planning in the country. As it is almost a monopoly in owning the extra HV transmission lines, back end integration approach of the grid is against its growth plans as there is no EHV lines need in next 10 years. The construction and owning of HV lines shall be divested from the PGCIL by splitting the company in to two and it should be allowed as only O&M service provider /operator for EHV systems including privately owned EHV lines and substations. Then only PGCIL

would really contribute to achieve the optimised national grid with least investment in future.

I would request you to plan the national grid on above methodology identifying first the needs of each tail end distribution sub-station (future distribution substations also) to make it self sufficient. It is also possible to privatise each distribution substation for better service to the electricity consumers.

Best Rgards,
N. Sasidhar