Technocommercial Comparison of Considering Single & Two Separate 220kV EHV Substations for Palava

Sr No	Description	Single EHV Substation(Option-1)	Two Seprate EHV Substations(Option-2)	Remarks
1	Electrical Installation Works Cost			**Option-1** 3 Nos. 220kV/22kV,100MVA Transformers are considered with (n-1) standby inside 220kV EHV Air Insulated Substation to feed the total load of 200MVA. **Option-2** 200MVA,220kV Power supply will be taken to feed 100MVA load at EHV Substation-1 location.It will feed another 100MVA load of EHV Substation-2 through 220kV underground cables from EHV Substation-1. 3 Nos. 220kV/22kV,50MVA Transformers are considered with (n-1) standby inside 220kV EHV Air Insulated Substation to feed the total load of 100MVA in both EHV Substation-1 & 2.
(a)	220kV EHV Substation Cost (in Million Rs.)	376	699	**Battery Limits for Option-1 & 2** For Both the options comparison is made considering the scope from 220kV EHV Substation to 22kV Intermediate Switching Stations excluding the Switching station 22kV Indoor switchgear panel.
(b)	22kV System Cost (in Million Rs.)	729	398	
(c)	220kV Cable Cost (in Million Rs.)	-	276	
	Total(a+b+c)	**1106**	**1373**	
2	Capital Investment Considering Phasewise Development	212	242	If we consider phasewise growth initially in case of Option-1,Two numbers of 220kV/22kV,100MVA transformer(100% Standby) has to be installed whereas in case of Option-2 all 3 nos.of 50MVA transformer needs to be installed(with n-1) standby to cater 100MVA load.
3	Land Requirement(Acres)	4	8	Land Requirement includes 220kV Switchyard +Control & MV Switchgear Building+Firefighting pump room+Open Space for Parking & Roads
4	Space Required for Utility Corridor			
(a)	220kV Cables (Acres)	-	3	In case of Option-2 220kV,200MVA Power Supply will come to EHV Substation-1 & from EHV Substation-1 220kV,100MVA supply will be further brought to EHV Substation-2 through 220kV cables inside plot by 2Mx2M wide corridor.
(b)	22kV Cables (Acres)	8	6	In case of Option-2 the corridor required for 22kV cable is optimized due to location of EHV Substation-1 & 2
5	Adherence to statutory guidelines as per MSEB	Yes	No	MSEB guidelines reads that if one EHV substation is set up in a particular area then it is not allowed to set up second EHV substation in 10kM radius of that area.

Assumptions

1 Double Main Busbar arrangement is considered for 220kV EHV Substation.

2 Cost of 220kV Transmission Line from MSETCL Substation to 220kV EHV Substation inside the plot has not been considered.