BHARAT HEAVY ELECTRICALS LIMITED (BHEL)

A Government of India Undertaking • Est. 1964 • Listed: NSE & BSE • CIN: L74899DL1964GOI004281

NOTICE INVITING

EXPRESSION OF INTEREST (EoI)

for

Technology Collaboration

with GIS Manufacturing OEMs — **A Win-Win Opportunity for India's Growing Market**

Extra High Voltage (EHV) Gas Insulated Substation (GIS) & Hybrid GIS (H-GIS) Technology

EoI Ref No.: BHEL/AA/TL/0402 • Date of Issue: 08 May 2026 • Last Date: 05 June 2026

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AT A GLANCE

Issued by: Bharat Heavy Electricals Limited
EoI Ref No.: BHEL/AA/TL/0402
Date of Issue: 08 May 2026 **Last Date for Response:** 05 June 2026
Mode of EoI Submission: Email/Hard Copy
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1. PARTNERSHIP WITH BHEL — AN OPPORTUNITY FOR GIS MANUFACTURING OEMs

Dear OEM Partner,

India is the world's fastest-growing large economy — and it is witnessing an unprecedented expansion in its power transmission infrastructure, driven by the rapid growth of renewable energy and sustained addition of conventional generation capacity. A large number of substations and switchyards, including Gas Insulated Substation (GIS) up to 765 kV, are being planned and executed across the country for evacuation of power from solar, wind, hydro, nuclear and thermal projects.

Bharat Heavy Electricals Limited (BHEL) — It is a leading state-owned company, wherein Government of India is holding 58.17% of its equity. BHEL is an integrated power plant equipment manufacturer and one of the largest engineering and manufacturing enterprise in India, catering to the core infrastructure sectors of Indian economy viz. energy, transportation, and heavy engineering industry, defence, renewable and non-conventional energy, with over 60 years of manufacturing heritage, 15 manufacturing units, 2 repair units, 4 regional offices, 9 service centres and 15 regional marketing centres besides host of project sites spread all over India and abroad — is extending an invitation to you.

BHEL does not want to merely buy GIS & Hybrid-GIS, but wants to manufacture them — here in India, under technology license from you and sell them to our growing base of government and private industrial customers. BHEL wants you to earn royalties on every GIS it builds. It will open up a market that cannot be easily accessed on your own. And we want to do this in a way that is simple, transparent and commercially rewarding for both parties.

This is not a tender. This is an invitation to a genuine business partnership — one where both sides win.

THE BHEL PROPOSITION IN ONE SENTENCE:

You bring the technology. BHEL brings the market, the manufacturing plant, the workforce, the advantage of local presence and the government relationships.

You earn technology transfer fee along with royalties every time BHEL sells a GIS & H-GIS and build reference of your GIS technology in Indian market. BHEL builds capacity and business.

No capital investment required from you. No need to set up a new entity in India. Maximum market access with minimum risk.

2. FUTURE POWER GENERATION AND TRANSMISSION REQUIREMENT IN INDIA

India having already achieved over 50% non-fossil fuel installed capacity (~510 GW total installed capacity) and added nearly 50 GW of renewable capacity in 2025 alone, the demand for robust EHV transmission systems has intensified significantly.

To support this growth, transmission infrastructure investments have accelerated sharply. Project investment reached approximately more than USD 21.28 Billion (INR 2 lakh crore) during FY25–FY26, while an additional USD 10.64 Billion (INR 1 lakh crore) capex is expected in the inter-state transmission system over FY26–FY27, primarily for renewable energy evacuation and grid strengthening. This reflects the Government of India's continued focus on strengthening the national grid to meet its ambitious target of 500 GW non-fossil capacity by 2030.

In order to effectively participate in this expanding market, a large number of substations and switchyards, including Gas Insulated Substations (GIS) up to 765 kV, are being planned and executed across the country for evacuation of power from solar, wind, hydro, nuclear and thermal projects.

USD 1B+	**10%**	**70-80%**
Projected Indian GIS Market by 2030	Market CAGR — Fastest growing globally	Localization for standard GIS ratings (up to 400kV) by 2030

2.1 Policy tailwinds that directly benefit your technology partnership with BHEL

- ✓ **Make in India** — Under the Public Procurement (Preference to Make in India) mandate by Govt. of India, emphasis on domestic manufacturing/localisation of content (local content 50% for EHV GIS) — gives BHEL a decisive procurement edge over imported GIS in government/PSU business opportunities.

- ✓ **Atmanirbhar Bharat (Self-Reliant India)** — India's strategic push to reduce import dependence in critical sectors. Partnership with BHEL directly positions your technology as the instrument of India's self-reliance — a powerful narrative with government buyers.

- ✓ **Capital Expenditure Surge** — The Indian power sector is experiencing a significant surge in Capital Expenditure (CapEx), driven by the massive infrastructure requirements for evacuating 500 GW of renewable energy by 2030.

2.2 Key sectors generating GIS demand — your royalty pipeline

Sector	Key End Customers (BHEL's Existing Relationships)
Power Transmission & Distribution (T&D) Utilities	*POWERGRID, State Utilities, TATA Power, Adani, Resonia, Indigrid*
Power Producer (Thermal, Hydro, Nuclear)	*NTPC Limited, Adani Power, JSW Energy, SJVN Ltd., NHPC, NPCIL*

Sector	Key End Customers (BHEL's Existing Relationships)
Renewable Energy Integration	*Adani Green Energy, Sterlite Power, TATA Power, Sterling Wilson*
Heavy Industries	*BHEL, L&T, JSW, Other private Manufacturers*
Data Centres	*Reliance, Adani, POWERGRID, Google, Amazon*
Transportation	*Metro Rail Corps, Indian Railways*
Smart Cities	*Ensuing Smart cities in India*

3. ABOUT BHEL — YOUR MANUFACTURING & MARKET ACCESS PARTNER

Established in 1964, BHEL is a Government of India Enterprise listed on NSE and BSE. BHEL is an integrated power plant equipment manufacturer and one of the largest engineering and manufacturing enterprise in India, catering to the core infrastructure sectors of Indian economy viz. energy, transportation, and heavy engineering industry, defence, renewable and non-conventional energy. The energy sector covers generation, transmission and distribution of equipment for thermal, gas, hydro, nuclear and solar photo voltaic power plant. BHEL has been in this business for more than 60 years and BHEL supplied equipment account for approx. 200 GW of the total thermal generating capacity in India.

60+ Years Manufacturing Heritage	**15** Manufacturing Units	**500+** Government & Private Customers	**14** Global OEM Partners	**27000+** Skilled Workforce	**Pan-India** Sales & Service Network

3.1 Manufacturing Plant — Ready Infrastructure for Your Technology

Plant Location	Current Specialisation	Potential for New Technology Partnership
Bhopal, Madhya Pradesh	Manufacturing capability of SF6 GIS up to 145 kV.	*Flagship plant; ideal for GIS & H-GIS manufacturing in its existing facility*

3.2 BHEL's Heritage of Global Technology Partnerships

BHEL has a proven, decades-long track record of successfully absorbing, adapting, and indigenising world-class manufacturing technology from international technology partners. Your technology will be in safe hands. Below is list of our current technology partners:

Sl. No.	Technology Partner	Country	Products
1.	M/s Siemens Energy Global GmbH & Co. KG	Germany	*Steam Turbines, Generators and Lateral/Axial Condensers*
2.	M/s Valmet Automation Oy,	Finland	*Distributed Control System*
3.	M/s Sumitomo SHI FW Energia Oy.	Finland	*Circulating Fluidised Bed Combustion (CFBC) Boilers*
4.	M/s Nano Company Limited	Republic of Korea	*SCR Catalyst for DeNOx Applications*
5.	M/s TS Nexgen Company Limited	Republic of Korea	*Gates and Dampers*
6.	M/s E2S Company Limited	Republic of Korea	*Excitation system for synchronous machines*
7.	M/s Babcock Power Environmental Inc.	USA	*Selective Catalytic Reduction (SCR) System for De-NOx applications*
8.	M/s Vogt Power International Inc.	USA	*Heat Recovery Steam Generators (HRSGs)*
9.	M/s Arabelle Solutions France (Erstwhile M/s General Electric Technology GmbH)	France	*700 MWe Steam Turbine for PHWR based Nuclear Power Plants*
10.	M/s Leonardo S.p.A.	Italy	*76/62 Upgraded Super Rapid Gun Mount (SRGM)*
11.	M/s Kawasaki Heavy Industries Limited	Japan	*Stainless steel coaches and bogies for metros*
12.	M/s Mitsubishi Heavy Industries Ltd	Japan	*Flue Gas Desulphurization*
13.	M/s General Electric Technology GmbH	Switzerland	*Gas Turbines*
14.	M/s HIMA Middle East FZE	Dubai	*KAVACH (Signaling System)*

4. THE WIN-WIN COMMERCIAL MODEL — HOW BOTH PARTIES BENEFIT

BHEL's partnership model is structured specifically to ensure that both parties extract maximum commercial value without the complexity, capital risk, or governance burden of a joint venture. The model is simple, transparent, and proven globally.

OUR PHILOSOPHY: Technology Licensing + Authorised Manufacturing + Revenue Sharing

BHEL manufactures under technology license, sells in India & agreed overseas territories, and pays the OEM an agreed royalty per GIS sale.

The OEM gets technology transfer fees along with recurring royalty income from India's fastest-growing market — with ZERO capital investment and ZERO balance sheet risk, additionally Business sharing option can be explored in the initial years.

4.1 Proposed Partnership Structure

BHEL proposes the following partnership structure:

Partnership Mode	Description	OEM Commercial Benefit
Technology Collaboration Agreement (TCA)	▪ BHEL manufactures the OEM's GIS & H-GIS under a formal technology license. ▪ BHEL pays – 1) a technology transfer fee as per agreed milestones. 2) running royalty per GIS & H-GIS manufactured and sold by BHEL. 3) Business sharing option can also be explored in the initial years. ▪ BHEL is the entity that books order, manufactures, and delivers. ▪ IP-ownership at any time lies with OEM only.	▪ Negotiated technology transfer fee payment as per agreed milestones ▪ Negotiated royalty per GIS & H-GIS manufactured and sold by BHEL. ▪ Component/spare parts export revenue can be explored. ▪ Brand co-marketing, Low-risk, high-margin income.

4.2 What the OEM Gains

✓ **TECHNOLOGY TRANSFER FEE** for enable BHEL to do design, engineering, manufacture, assembly, quality control, testing, installation, commissioning, repair, service, maintenance, operation and retrofitting of the GIS & Hybrid GIS.

✓ **ROYALTY INCOME** on every GIS & H-GIS manufactured and sold by BHEL under your technology license — a recurring revenue stream from a large market with no marginal cost to you.

✓ **COMPONENT & SPARE PART SUPPLY** — BHEL may source specialised components, sub-assemblies, and parts from you, generating a parallel export revenue stream for your factory in initial years of partnership.

✓ **INDIA MARKET PENETRATION** without the need to establish a subsidiary, hire local staff, navigate Indian regulations, or invest capital — BHEL does all of this for you.

✓ **BRAND PRESENCE** in a high-growth market — BHEL will co-market your brand and technology in all promotional materials, tenders, and customer interactions.

✓ **PREFERENTIAL POSITIONING** in future Indian government business opportunities — GIS & H-GIS manufactured under your technology license by BHEL will be positioned as 'Made in India' with full tender eligibility.

✓ **NO JOINT VENTURE RISK** — no shared liability, no governance disputes, no lock-in of capital — you retain full ownership of your technology and IP at all times.

5. TECHNOLOGY AREAS SOUGHT — EHV GIS & H-GIS VOLTAGE CATEGORIES OF INTEREST

BHEL invites technology collaboration proposal across the following EHV GIS & H-GIS voltage categories.

We invite OEMs to present their full product range for EHV GIS & H-GIS for which OEM is interested in technology licensing — the right fit will be determined during bilateral discussions with shortlisted technology partners.

Sl. No.	EHV GIS & H-GIS Voltage Rating
1.	72.5kV
2.	145kV
3.	245kV
4.	420kV
5.	765kV

6. ELIGIBILITY & PRE-QUALIFICATION REQUIREMENTS (PQRs)

To ensure that shortlisted technology partners have the genuine technical and commercial capability to deliver a meaningful technology partnership, prospective collaborator/OEMs must meet the following criteria:

- Prospective Collaborator/OEM should have designed, manufactured, type tested as per IEC, supplied and commissioned Gas Insulated Switchgear (GIS) of 400kV, 63kA or above voltage rating as on the closing date of this EoI.

(Prospective Collaborator/OEM is required to substantiate the above PQRs by providing 'type test certificate' as documentary evidence)

Land-Border Country Note:
Prospective Collaborator from countries sharing a land border with India must be duly registered with the Registration Committee constituted by DPIIT (Department for Promotion of Industry and Internal Trade), Government of India, and submit valid registration with their EoI response.

7. DOCUMENTS TO BE SUBMITTED WITH EoI RESPONSE

Sl. No.	Document	Content Required
REQUIRED AT EoI STAGE (Submit with your EoI Response by 05 June 2026)		
1.	**Company Profile & Product Catalogue**	Corporate overview, ownership, group structure, global presence and key subsidiaries. Technical features/ product catalogue.
2.	**Manufacturing facilities and relevant certificates**	Details on current manufacturing facility & relevant certificates
3.	**Indicative Scope of Technology Transfer (Annexure-1)**	Indicative Scope of Technology Transfer under Technology Collaboration Agreement as per Annexure-1.
4.	**OEM's Confirmation (Annexure-2)**	OEM's Confirmation as per Annexure-2.
5.	**Supply Reference List (Annexure-3)**	Reference projects list as per Annexure-3.
6.	**DPIIT Registration (Land-Border Sharing Countries Only)**	Mandatory for prospective collaborator from countries sharing a land border with India (as defined under GoI. guidelines). Valid DPIIT registration certificate to be enclosed with EoI response. Failure to provide valid registration will result in automatic disqualification. Not applicable to all other countries.

8. PROCESS & TENTATIVE TIMELINE

BHEL will follow a structured, transparent, and time-bound process to evaluate EoI responses and progress to partnership agreement with shortlisted OEMs:

Sl. No.	Date	Activity / Milestone	BHEL Action / Outcome
1.	**08 May 2026**	Issue of EoI — Publication on BHEL website and direct outreach to targeted OEMs globally	*EoI published; global OEM outreach initiated*
2.	**05 June 2026**	Last date for submission of EoI Responses (E-mail/hard copy response by 23:59 IST)	*Submission window closes*
3.	**June 2026**	Evaluation of EoI Responses by BHEL Technical & Commercial Committee	*Internal evaluation and shortlisting*
4.	**June 2026**	Intimation to shortlisted OEMs; Non-Disclosure Agreements (NDA) executed, if required.	*NDAs signed; detailed discussions initiated*

Sl. No.	Date	Activity / Milestone	BHEL Action / Outcome
5.	July–August 2026	Technical Presentations by shortlisted OEMs at BHEL Corporate office (or video conference); plant visits, if required.	*Best-fit OEMs identified for partnership*
6.	August–Sep. 2026	Commercial negotiations — technology fee, royalty structure, scope of technology transfer, training plan, business sharing option etc.	*Heads of Agreement / Term Sheets finalised*
7.	October 2026	Signing of Technology Collaboration Agreement (TCA) with selected partners	*Formal partnerships established*
8.	Nov. 2026 onwards	Technology transfer commencement — design data, drawings, process sheets, training at OEM premises, deputation of OEM experts to BHEL	*Production under Agreement commences*

9. HOW TO SUBMIT YOUR RESPONSE

- EoI Responses must be submitted in either hard copy (signed + stamped) OR electronic copy (signed, stamped & scanned PDF via email) formats by **5th June 2026**.
- Language: All correspondences and documents related to the EoI response shall be in English language
- All pages of the response against this EoI shall be duly signed by the authorized signatory.
- Corrigendum / amendments, if any, will be published ONLY on BHEL's website: www.bhel.com

Submit To:

Additional General Manager
Corporate Technology Management,
Bharat Heavy Electricals Limited (BHEL),
BHEL House, Siri Fort, New Delhi 110049
Tel: +91-11- 6633- 7377/7198
Mobile: +91 9958181792
E-Mail: techeoi@bhel.in

10. GENERAL TERMS, CONDITIONS & LEGAL PROVISIONS

10.1 Nature of this Document

This EoI does not constitute a binding commitment by BHEL to enter into any agreement. BHEL reserves the right to accept, reject, shortlist, or negotiate with any or all respondents without assigning reasons.

10.2 No Cost / No Obligation

BHEL shall not reimburse any respondent for costs incurred in preparing or submitting an EoI response. Submission confers no rights on the respondent.

10.3 Confidentiality

All information provided in EoI responses will be treated as strictly confidential and used solely for evaluation purposes. Formal NDAs will be executed with shortlisted OEMs before detailed discussions commence, if required. Respondents must not disclose their participation to any third party without BHEL's written consent.

10.4 Intellectual Property

Each party's pre-existing IP remains exclusively with the originating party. Technology transfer terms, including license scope, royalty rates, sub-licensing rights, and IP indemnification, will be governed by the definitive Technology Collaboration Agreement (TCA) negotiated with selected partners.

10.5 Right to Amend or Cancel

BHEL reserves the right to modify, amend, or cancel this EoI at any stage without liability. Any amendments will be published on www.bhel.com only.

10.6 Visit to OEM's premises

BHEL at its discretion shall inspect the Prospective Collaborator's works / office / reference site premises for the purpose of evaluation, as deemed necessary before finalisation of Partner. BHEL's decision in this regard shall be final.

10.7 Disqualification

Respondents submitting false, misleading, or materially incomplete information, or attempting to improperly influence BHEL's evaluation process, will be disqualified.

10.8 Land-Border Country Restriction

Entities from countries sharing a land border with India (as defined by Government of India guidelines) must hold valid DPIIT registration at the time of EoI submission. Failure to provide valid registration will result in disqualification.

10.9 Governing Law & Jurisdiction

The EoI process shall be governed by, and construed in accordance with the laws of India and the Courts at New Delhi (India) shall have exclusive jurisdiction over all disputes arising under, pursuant to and / or in connection with the EoI process.

Join India's Manufacturing Revolution

India is building. The demand is real. The market is open. The policy is favourable.
BHEL offers you the fastest, lowest-risk, highest-reward path to India's GIS market.

Your technology. Our market. Our plants. Our relationships. Our shared success.

For BHEL
Additional General Manager (CTM) | New Delhi, India | 08 May 2026

ANNEXURE — 1

INDICATIVE SCOPE OF TECHNOLOGY TRANSFER

Sl. No.	Scope of Technology Transfer (Subject to mutual agreement)
1.	Licensing & transfer of latest technology relating to the design, engineering, manufacture, assembly, quality control, testing, installation, commissioning, repair, service, maintenance, operation and retrofitting of the GIS & Hybrid GIS.
2.	Information and assistance to be provided for establishing the new manufacturing, assembly and testing methodologies, facilities & processes/ suitable augmentation at BHEL's existing facilities/processes by way of expert advice in terms of identifying, sizing & selection of equipment / machinery required for manufacturing, testing and inspection facilities.
3.	Transfer of information to enable BHEL to source/procure those items, which Prospective Collaborator sources from other vendors (if these are not manufactured by the Prospective Collaborator) for use in GIS & Hybrid GIS.
4.	Transfer of applicable Proprietary hardware /computer programs including logics and source code.
5.	Transfer of improvements/modifications/developments/up gradations to be carried out by the Prospective Collaborator during the period of proposed Agreement for taking care of new market requirements and obsolescence.
6.	Transfer of Site feedback and troubleshooting information
7.	Training of BHEL engineers in design, engineering, manufacture, assembly, quality control, testing, installation, commissioning, repair, service, maintenance, operation and retrofitting the GIS & Hybrid GIS.
8.	Deputation of Prospective Collaborator's experts to assist BHEL in absorbing the technology for GIS & Hybrid GIS.
9.	Technology being proposed should be the latest/ state-of-the-art being marketed by the Prospective Collaborator.
10.	Support through engineering services from Prospective Collaborator's design office / manufacturing facilities for GIS & Hybrid GIS.

Signature & Seal:

(Authorized Signatory of the Prospective Collaborator)

ANNEXURE — 2

OEM's Confirmation — To be furnished by Prospective Collaborator

Sl. No.	Criteria	Requirement / Question	Response Format
(a)	**OEM Status**	Whether the prospective collaborator is an Original Equipment Manufacturer (OEM) of GIS & Hybrid GIS	*Yes / No + Details*
(b)	**Meeting Pre-Qualification Requirements (PQRs)**	Whether the prospective collaborator meets the following PQRs – *Prospective Collaborator/OEM should have designed, manufactured, type tested as per IEC, supplied and commissioned Gas Insulated Switchgear (GIS) of 400kV, 63kA or above voltage rating as on the closing date of this EoI.*	*Yes / No + Documentary Evidence*
(c)	**IPR Ownership**	Does the prospective collaborator own the IPR for the technology being proposed under the technology license to BHEL.	*Yes / No*
(d)	**Product Range**	Whether OEM is having complete range of EHV GIS & Hybrid GIS Products starting from 72.5kV to 765kV.	*Yes / No + Product details*
(e)	**Technical requirements**	Whether the prospective collaborator of GIS & Hybrid GIS meet the technical requirements specified in Annexure-4 for individual voltage rating.	*Yes / No + Details*
(f)	**Type test requirements**	Whether the OEM of GIS & Hybrid GIS Products (within the voltage rating starting from 72.5kV to 765kV) are successfully type tested as per IEC or equivalent standard to the technical parameters specified in Annexure-4. (*Whether type test certificate of 72.5 kV/145 kV/ 245 kV/420 kV/765 kV of GIS & Hybrid GIS Products has been enclosed*)	*Yes / No + Certificates for the specific voltage rating*
(g)	**References**	Whether prospective collaborator's detailed reference list as per Annexure-3 has have been enclosed.	*Yes / No + Details*

Sl. No.	Criteria	Requirement / Question	Response Format
(h)	**Company Profile Enclosed**	Company background, ownership, group structure, and product catalogues enclosed.	*Yes / No*
(i)	**Blacklisting / Debarment**	Has the prospective collaborator been debarred / blacklisted by Indian Central / State Governments or by any entity controlled by Indian Central / State Governments from participating in any of their project, as on date of submission of EoI.	*Yes / No (if Yes, details)*
(j)	**DPIIT Registration Requirements**	Mandatory for prospective collaborator from countries sharing a land border with India (as defined under Govt. of India guidelines)	*Yes / No (if Yes, enclose the DPIIT registration certificate)*

Signature & Seal:

(Authorized Signatory of the Prospective Collaborator)

ANNEXURE — 3

Reference List of Major Supplies — Last 7 Years

(A) 72.5 kV GIS & HYBRID GIS:

Sl. No.	Contract No. & Date	Customer	No of Bays	Qty	Year Of Delivery	Year of commissioning
1						
2						
3						

(B) 145 kV GIS & HYBRID GIS:

Sl. No.	Contract No. & Date	Customer	No of Bays	Qty	Year Of Delivery	Year of commissioning
1						
2						
3						

(C) 245 kV GIS & HYBRID GIS:

Sl. No.	Contract No. & Date	Customer	No of Bays	Qty	Year Of Delivery	Year of commissioning
1						
2						
3						

(D) 420 kV GIS & HYBRID GIS:

Sl. No.	Contract No. & Date	Customer	No of Bays	Qty	Year Of Delivery	Year of commissioning
1						
2						
3						

(E) 765 kV GIS & HYBRID GIS:

Sl. No.	Contract No. & Date	Customer	No of Bays	Qty	Year Of Delivery	Year of commissioning
1						
2						
3						

Signature & Seal:

(Authorized Signatory of the Prospective Collaborator)

ANNEXURE — 4

Technical Parameters

Parameters	Unit	66kV System	132kV System	220kV System	400kV System	765kV System
Rated voltage, Umax	kV	72.5	145	245	420	800
Rated Normal Current	A	1250/1600/2500/3150	1250/1600/2500/3150	1600/2500/3150/4000	3150/4000/5000	3150/4000/5000
Rated Frequency	Hz	50/60	50/60	50/60	50/60	50/60
Symmetrical breaking current	kA	31.5	40	50	63	63
One minute Power frequency Voltage (CB Open) Common Value / Across isolating distance	kV RMS	140	275	460	610	1150
Rated Lightning Impulse Voltage,	kVp	Common Value : ±325 Across isolating distance : 375	Common Value : ±650 Across isolating distance: 750	Common Value : ±1050 Across isolating distance : 1200	±1425(+240)	±2100(+455)
Rated Switching Impulse Voltage	kVp	-	-	-	1050	1550
Rated short circuit making current / peak withstand current Circuit breaker	kAp	78.75	100	125	157.5	157.5
Rated short circuit making current / peak withstand current Circuit breaker Earthling Switch	kAp	78.75	100	125	157.5	157.5
Rated out of Phase current with voltage factor2.0 for CB	kA	7.875	10	12.5	15.75	15.75
Rated Capacitive switching current (Line charging & cable charging) with voltage factor 1,4 (Amps) for CB as per IEC 62271-100	A	10	50	125	400 for Line Charging 600 for Cable charging	900
Rated shunt reactor switching current with overvoltage as per IEC 62271-110	A	315/100	315/100	315/100	315/100	315/100
Maximum Closing Time (ms)CB	ms	100	100	100	100	100
Rated break time (opening time + arcing time)ms CB		Less than or equal to 60 (3 Cycles)	Less than or equal to 50 (2.5Cycles)	Less than or equal to 50 (2.5Cycles)	Less than or equal to 40 (2 Cycles)	Less than or equal to 40 (2Cycles)

Parameters	Unit	66kV System	132kV System	220kV System	400kV System	765kV System
CB Operation		Gang	Gang	Gang/IPO (Individual pole operated)	IPO (Individual pole operated)	IPO (Individual pole operated)
Rated operation sequence CB		O-0.3s-CO-180s-CO	O-0.3s-CO-180s-CO	O-0.3s-CO-180s-CO	O-0.3s-CO-180s-CO	O-0.3s-CO-180s-CO
Breaks per pole CB		1	1	1	1	2/4(Without Grading capacitors preferred, 2 break design preferred
Class (CB)		M2/C2/E2	M2/C2/E2	M2/C2/E2	M2/C2/E2	M2/C2/E2
Rated short time withstand current	kA for 3 sec	40kA for 3 sec.	40 kA for 3 sec.	63kA for 3 sec.	63kA for 3 sec.	63kA for 3 sec.
SF6 Leak rate		Less than 0.5% /Annum (0.2% per annum preferred)	Less than 0.5% /Annum	Less than 0.5% /Annum	Less than 0.5% /Annum	Less than 0.5% /Annum
Operating mechanism Breaker		Spring-Spring (Close & Open)	Spring-Spring (Close & Open)	Spring-Spring (Close & Open)	Spring-Spring (Close & Open)	Spring-Spring (Close & Open)
Disconnecting switch & Earthling Switch Operating mechanism		Motor (Manual in case of emergency)	Motor (Manual in case of emergency)	Motor (Manual in case of emergency)	Motor (Manual in case of emergency)	Motor (Manual in case of emergency)
Fast acting earthing switch operating mechanism		Spring -spring mechanism	Spring -spring mechanism	Spring -spring mechanism	Spring -spring mechanism	Spring -spring mechanism
Enclosure		Circuit Breaker: 3 Phase Common	Circuit Breaker: 3 Phase Common	Circuit Breaker: Single Phase	Circuit Breaker: Single phase	Circuit Breaker: Single Phase
		Disconnecting & earthing Switch: 3 Phase Common	Disconnecting & earthing Switch: 3 Phase Common	Disconnecting & earthing Switch: 1 Phase	Disconnecting & earthing Switch: 1 Phase	Disconnecting & earthing Switch: 1 Phase
		Feeder Bus: 3 Phase Common	Feeder Bus: 3 Phase Common	Feeder Bus: 1 Phase	Feeder Bus: 1 Phase Common	Feeder Bus: 1 Phase
		Main Bus: 3 Phase Common	Main Bus: 3 Phase Common	Main Bus: 3 phase common (Preferred) or Single phase	Main Bus: 3 Phase Common or 1 phase	Main Bus: Single phase
Enclosure Material		Al. alloy	Al. alloy	Al. alloy	Al. Alloy	Al. Alloy
Installation		Indoor / out door	Indoor / out door	Indoor / out door	Indoor / out door	Indoor / out door
Bus Arrangement		Double Bus arrangement	Double Bus arrangement	Double Bus arrangement	Double Bus arrangement	Double Bus arrangement

Parameters	Unit	66kV System	132kV System	220kV System	400kV System	765kV System
		Double bus arrangement with By- pass isolator	Double bus arrangement with By- pass isolator	Double bus arrangement with By- pass isolator	Double bus arrangement with By- pass isolator	Double bus arrangement with By- pass isolator
		One and Half Circuit breaker arrangement	One and Half Circuit breaker arrangement	One and Half Circuit breaker arrangement	One and Half Circuit breaker arrangement	One and Half Circuit breaker arrangement
		Ring Bus arrangement	Ring Bus arrangement	Ring Bus arrangement	Ring Bus arrangement	Ring Bus arrangement
		Main And transfer Bus arrangement	Main And transfer Bus arrangement	Main And transfer Bus arrangement	Main And transfer Bus arrangement	Main And transfer Bus arrangement
		Bus Coupler	Bus Coupler	Bus Coupler	Bus Coupler	Bus Coupler
		Bus Sectionaliser	Bus Sectionaliser	Bus Sectionaliser	Bus Sectionaliser	Bus Sectionaliser
Provision for Pre insertion resistor (PIR)						PIR variant , 450 ohms per phase, Minimum insertion time 9ms
Applicable standards		IEC 62271-1	IEC 62271-1	IEC 62271-1	IEC 62271-1	IEC 62271-1
		IEC-62271-100	IEC-62271-100	IEC-62271-100	IEC-62271-100	IEC-62271-100
		IEC-62271-102	IEC-62271-102	IEC-62271-102	IEC-62271-102	IEC-62271-102
		IEC 62271-110	IEC 62271-110	IEC 62271-110	IEC 62271-110	IEC 62271-110
		IEC62271-203	IEC62271-203	IEC62271-203	IEC62271-203	IEC62271-203
		IEC62271-300	IEC62271-300	IEC62271-300	IEC62271-300	IEC62271-300
		IEC62271-305	IEC62271-305	IEC62271-305	IEC62271-305	IEC62271-305
		Any other standards applicable for GIS	Any other standards applicable for GIS	Any other standards applicable for GIS	Any other standards applicable for GIS	Any other standards applicable for GIS