

3. Technologies imported during the last three years imported during January - December 2020

- 800kV High Voltage Direct Current transformer manufacturing technology
- Elliptical windings in 1-phase 500 MVA, 765 kV auto transformers
- TXplore™ - transformer internal inspection robot that does not need oil removal from power transformer for inspection
- Migrated all the Disconnector products documents in Product Lifecycle Management
- New design and development of 420 kV current transformer
- Asset Performance Management (APM) software application
- Phasor measurement units for Wide Area Monitoring Systems
- Railways electrical system protection relays
- Multiprotocol Label Switching (MPLS) - Broadband Fiber optic communication thermal equipment with management software
- Latest High Voltage Direct Current valves, control and protection
- Ultra-High voltage Direct Current (UHVDC) transformer, bushing and DC yard equipment
- Prefabricated substation design
- Electric bus changing system (Grid-eMotion™ Flash) - Design, equipment and accessories
- Offshore wind power evacuation - engineering competency
- Digital Substation concept and solutions
- Data Centre design
- Skid - mounted switchgear solution concept and solutions
- Reliability centered maintenance concept and tool for substations
- Underground substation concepts and design

All technologies are fully absorbed.

4. The expenditure incurred on Research and Development:

SI No.	Information Type	January - December 2020
1	Expenditure on R&D and above product development/innovation	Expenditure on R&D and above product development/ innovation: The R&D, product development and innovation activities are part of global R&D, funded and owned by Hitachi ABB Power Grids global. Hence not reported here.

C. Foreign exchange earnings and outgo

Total foreign exchange used and earned

	(Amount in ₹ crores)	
	2020	2019
Foreign Exchange earned	616	531
Foreign Exchange used	934	643

For and on behalf of Board of Directors
For **ABB Power Products and Systems India Limited**

Achim Michael Braun
Chairman
DIN: 08596097

Bengaluru
February 26, 2021