NON-CONFIDENTIAL

Australian Government
Anti-Dumping Commission

Exporter Questionnaire

ABB Chongqing Transformer Co., Ltd.

Product:	**Power transformers**
From:	**China, Indonesia, Korea, Taiwan, Thailand and Vietnam**
Period of Investigation:	**1 July 2010 - 30 June 2013**
Response due by:	**9 September 2013**
	Extended to Monday 30 September
Investigation case manager:	**Chris Vincent**
Phone:	**+61 2 6275 6729**
Fax:	**1300 882 506**
E-mail:	**operations1@adcommission.gov.au**
Anti-Dumping Commission website:	**www.adcommission.gov.au**
Return completed questionnaire to:	**Anti-Dumping Commission** **Customs House** **5 Constitution Avenue** **Canberra ACT 2600** **Attention: Director Operations 1**

NON-CONFIDENTIAL

TABLE OF CONTENTS

TABLE OF CONTENTS **2**

GOODS UNDER CONSIDERATION **3**

SECTION A COMPANY STRUCTURE AND OPERATIONS **4**

A-1 IDENTITY AND COMMUNICATION 4
A-2 REPRESENTATIVE OF THE COMPANY FOR THE PURPOSE OF INVESTIGATION 4
A-3 COMPANY INFORMATION 5
A-4 GENERAL ACCOUNTING/ADMINISTRATION INFORMATION 6
A-5 INCOME STATEMENT 10
A-6 SALES 10

SECTION B SALES TO AUSTRALIA (EXPORT PRICE) **11**

SECTION C EXPORTED GOODS & LIKE GOODS **18**

SECTION D DOMESTIC SALES **20**

SECTION E FAIR COMPARISON **24**

E-1 COSTS ASSOCIATED WITH EXPORT SALES 24
E-2 COSTS ASSOCIATED WITH DOMESTIC SALES 26
E-3 DUPLICATION 31

SECTION F EXPORT SALES TO COUNTRIES OTHER THAN AUSTRALIA (THIRD COUNTRY SALES) **32**

SECTION G COSTING INFORMATION AND CONSTRUCTED VALUE **34**

G-1. PRODUCTION PROCESS AND CAPACITY 34
G-2. PROVIDE INFORMATION ABOUT YOUR COMPANY'S TOTAL PRODUCTION IN THE FOLLOWING TABLE: .. 34
G-3. COST ACCOUNTING PRACTICES 35
G-4 COST TO MAKE AND SELL ON DOMESTIC MARKET 36
G-5 COST TO MAKE AND SELL GOODS UNDER CONSIDERATION (GOODS EXPORTED TO AUSTRALIA) 37
G-6 MAJOR RAW MATERIAL COSTS 38

SECTION H EXPORTER'S DECLARATION **40**

SECTION I CHECKLIST **41**

GOODS UNDER CONSIDERATION

The goods under consideration (the goods) i.e. the goods exported to Australia, allegedly at dumped prices are:

> *Liquid dielectric power transformers with power ratings of equal to or greater than 10 MVA (mega volt amperes) and a voltage rating of less than 500kV (kilo volts) whether assembled or unassembled, complete or incomplete.*

Incomplete transformers are subassemblies consisting of the active part and any other parts attached to, imported with or invoiced with the active parts of power transformers. The active part of a power transformer consists of one or more of the following when attached to or otherwise assembled with one another:

- the steel core;
- the windings;
- electrical insulation between the windings; and
- the mechanical frame.

The product definition includes step-up transformers, step-down transformers, autotransformers, interconnection transformers, voltage regulator transformers, rectifier transformers, traction transformers, trackside transformers and power rectifier transformers.

Distribution transformers are not the subject of this application.

SECTION A
COMPANY STRUCTURE AND OPERATIONS

This section requests information relating to company details and financial reports.

A-1 Identity and communication

Please nominate a person within your company who can be contacted for the purposes of this investigation:

Head Office and factory

Name	**Zhiyong You (Julius)**
Position in the company	**Export Sales Manager** **Sales Department**
Address	**No.1 Huayannancun Yuqingsi** **Zhongliangshan** **Jiulongpo District** **Chongqing** **China**
Telephone	**+86 23 6509 3634**
Facsimile number	**+86 23 6509 3312**
E-mail address	**julius-zhiyong.you@cn.abb.com**

A-2 Representative of the company for the purpose of investigation

If you wish to appoint a representative to assist you in this investigation, provide the following details:

Name	**Charles Zhan** **Solicitor** **Moulis Legal**
Address	**6/2 Brindabella Circuit** **Brindabella Business Park** **Canberra International Airport** **Australian Capital Territory** **Australia 2609**
Telephone	**+ 61 2 6163 1000**
Facsimile number	**+ 61 2 6162 0606**
Email address of contact person	**charles.zhan@moulislegal.com**
All communications in relation to this matter should be directed to Moulis Legal in the first instance.	

Note that in nominating a representative, the Commission will assume that confidential material relating to your company in this investigation may be freely released to, or discussed with, that representative.

A-3 Company information

1. What is the legal name of your business? What kind of entity is it (eg. company, partnership, sole trader)? Please provide details of any other business names that you use to export and/or sell goods.

The legal name of the company is ABB Chongqing Transformer Co., Ltd. ("ABB CQ").

The company does not use any other business names for exports or sales in the domestic market.

2. Who are the owners and/or principal shareholders? Provide details of shareholding percentages for joint owners and/or principal shareholders. (List all shareholders able to cast, or control the casting of, 5% or more of the maximum amount of votes that could be cast at a general meeting of your company).

ABB (China) Limited ("ABB China") and Chongqing Transformer Co., Ltd. are the shareholders of ABB CQ. They hold [CONFIDENTIAL TEXT DELETED - number]% and [CONFIDENTIAL TEXT DELETED - number]% of the share capital respectively.

3. If your company is a subsidiary of another company, list the principal shareholders of that company.

ABB CQ is a subsidiary of ABB China which is invested and held by ABB Asea Brown Boveri Ltd.

4. If your parent company is a subsidiary of another company, list the principal shareholders of that company.

ABB Asea Brown Boveri Ltd. is wholly owned by ABB Ltd.

5. Provide a diagram showing all associated or affiliated companies and your company's place within that corporate structure.

The corporate structure chart showing direct associated or affiliated companies to ABB CQ within the ABB global group is provided at Attachment 1. [CONFIDENTIAL ATTACHMENT]

6. Are any management fees/corporate allocations charged to your company by your parent or related company?

[CONFIDENTIAL TEXT DELETED – management agreement between ABB Chongqing and related companies] For a copy of the agreement please see Attachment 2. [CONFIDENTIAL ATTACHMENT]

Please see Attachment 3 [CONFIDENTIAL ATTACHMENT] for a list of other intra group transactions.

7. Describe the nature of your company's business. Explain whether you are a producer or manufacturer, distributor, trading company, etc.

ABB CQ is a manufacturer of power transformers. The main business scope of ABB CQ is described as the design, manufacture, sale and delivery of AC power transformers, reactors and HVDC converter transformers.

8. If your business does not perform all of the following functions in relation to the goods under consideration, then please provide names and addresses of the companies which perform each function:

- produce or manufacture
- sell in the domestic market
- export to Australia, and
- export to countries other than Australia.

ABB CQ performs all of the functions as listed above.

9. Provide your company's internal organisation chart. Describe the functions performed by each group within the organisation.

The internal organization chart of ABB CQ is provided at Attachment 4 [CONFIDENTIAL ATTACHMENT].

10. Provide a copy of your most recent annual report together with any relevant brochures or pamphlets on your business activities.

Not applicable. ABB CQ does not publish such annual reports.

Please refer to Attachment 5 which is the ABB Zurich annual report.

A-4 General accounting/administration information

1. Indicate your accounting period.

The accounting period of ABB CQ is from 1 January to 31 December.

2. Indicate the address where the company's financial records are held.

The financial records are kept at the same address as indicated under A-1.

3. Please provide the following financial documents for the two most recently completed financial years plus all subsequent monthly, quarterly or half yearly statements:

- chart of accounts;
- audited consolidated and unconsolidated financial statements (including all footnotes and the auditor's opinion);
- internal financial statements, income statements (profit and loss reports), or management accounts, that are prepared and maintained in the normal

course of business for the goods under consideration.

These documents should relate to:

- the division or section/s of your business responsible for the production and sale of the goods under consideration, and
- the company.

The financial documents provided are the following:

- **Attachment 6 - [CONFIDENTIAL ATTACHMENT] Chart of accounts. ABB (China) issues and updates its chart of accounts regularly. The chart of accounts provided in the submission is relevant to and was actively used by ABB CQ during each fiscal year of the period of investigation.**
- **Attachments 7 and 8 - [CONFIDENTIAL ATTACHMENTS] audited reports for the years 2011 and 2012.**
- **Attachment 9 - [CONFIDENTIAL ATTACHMENT] monthly statements for the first half year of 2013.**

ABB CQ does not prepare internal financial statements, income statements or management accounts for the goods under consideration.

4. If you are not required to have the accounts audited, provide the unaudited financial statements for the two most recently completed financial years, together with your taxation returns. Any subsequent monthly, quarterly or half yearly statements should also be provided.

ABB CQ is required to have its accounts audited.

5. Do your accounting practices differ in any way from the generally accepted accounting principles in your country? If so, provide details.

No

6. Describe:

The significant accounting policies that govern your system of accounting, in particular:

- the method of valuation for raw material, work-in-process, and finished goods inventories (eg last in first out –LIFO, first in first out- FIFO, weighted average);

Inventories of work-in-process and finished goods are initially measured at their cost. The cost of inventories comprises purchase costs, processing costs and other costs. The cost of inventories of raw materials issued is determined on the moving average basis. Low-valued consumables and packaging materials on cyclic use is amortized in full amount for one time.

- costing methods, including the method (eg by tonnes, units, revenue,

direct costs etc) of allocating costs shared with other goods or processes (such as front office cost, infrastructure cost etc);

The company uses process costing system, which consists of seven steps: tank, Insulation Kits, winding, core, active part, final assembly and test.

The costs shared with other goods or processes are allocated by labor hours, test hours, or design hours in accordance with the nature of the expenses.

- valuation methods for damaged or sub-standard goods generated at the various stages of production;

Not applicable. The valuation methods for damaged or sub-standard goods are not used for complete equipment such as power transformer.

- valuation methods for scrap, by products, or joint products;

Scrap is sold to the market and recorded as other operating income. Scrap value is determined on the basis of market prices.

- valuation and revaluation methods for fixed assets;

Fixed assets are measured on initial recognition at cost. The cost of an item of fixed assets comprises its purchase price, including import duties, non-refundable purchase taxes, and any cost directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management.

- average useful life for each class of production equipment and depreciation method and rate used for each;

Depreciation is provided on fixed assets using the straight-line method. The estimated useful lives, estimated residual values, and the annual depreciation rates of each category of fixed assets are as follows:

Category	Estimated useful life	Annual depreciation rate
Building	[CONFIDENTIAL TEXT DELETED – numbers]	[CONFIDENTIAL TEXT DELETED – numbers]
Machinery		
Electronic equipment		
Office equipment		
Vehicles		
Tools		

- treatment of foreign exchange gains and losses arising from transactions;

Transactions in foreign currencies are translated into functional currency using the rates prevailing on the dates of the transactions.

- treatment of foreign exchange gains/losses arising from the translation of balance sheet items;

Monetary assets and liabilities denominated in foreign currencies are retranslated at the functional currency spot rate of exchange ruling at the balance sheet date. All exchange differences are taken to the income statement with the exception of those arising from foreign currency borrowings in relation to the acquisition, construction or production of qualifying assets are accounted for according to the requirements relating to the capitalization of borrowing costs.

Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rates as at the dates of the initial transactions. Non-monetary items measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value is determined. The translation differences are taken to the income statement or other comprehensive income according to the nature of the nonmonetary items.

- inclusion of general expenses and/or interest;

Borrowing costs which are directly attributable to construction or production of all qualifying assets are capitalized. Other borrowing costs are treated as an expense.

- provisions for bad or doubtful debts;

[CONFIDENTIAL INFORMATION DELETED – internal accounting methodology]

- expenses for idle equipment and/or plant shut-downs;

Not applicable, in that ABB CQ did not experience idle equipment and/or shut-down during the POI.

- costs of plant closure;

Not applicable, in that ABB CQ did not experience plant closure during the POI.

- restructuring costs;

Not applicable, in that ABB CQ did not experience restructuring costs during the POI.

- by-products and scrap materials resulting from your company's production process; and

Scrap that results from production process are sold on the basis of market prices. Scrap sales are recorded as other operating income.

- effects of inflation on financial statement information.

Not applicable, in that ABB CQ did not have to account for effects of inflation during the POI.

7. In the event that any of the accounting methods used by your company have changed over the last two years provide an explanation of the changes, the date of change, and the reasons for it.

ABB CQ has not changed its accounting methods during the last two years.

A-5 Income statement

Please fill in the following table. It requires information concerning all products produced and for the goods under consideration (*'goods under consideration'* (the goods) is defined in the Glossary of Terms in the appendix to this form). You should explain how costs have been allocated.

Prepare this information on a spreadsheet named "**Income statement**".

This information will be used to verify the completeness of cost data that you provide in Section G. If, because of your company's structure, the allocations would not be helpful in this process, please explain why this is the case.

Please refer to Attachment 10 - Income statement. [CONFIDENTIAL ATTACHMENT]

A-6 Sales

State your company's net turnover (after returns and all discounts), and free of duties and taxes. Use the currency in which your accounts are kept, in the following format:

Prepare this information in a spreadsheet named "TURNOVER".

This information will be used to verify the cost allocations to the goods under consideration in Section G.

Also, you should be prepared to demonstrate that sales data shown for the goods is a complete record by linking total sales of these goods to relevant financial statements.

Please refer to Attachment 11 - Turnover. [CONFIDENTIAL ATTACHMENT]

SECTION B
SALES TO AUSTRALIA (EXPORT PRICE)

This section requests information concerning your export practices and prices to Australia. You should include costs incurred beyond ex-factory. Export prices are usually assessed at FOB point, but the Commission may also compare prices at the ex factory level.

*You should provide details of **all** goods under consideration (the goods):*

- *invoiced during the investigation period; and*
- *subject to tenders that were won during the investigation period, even in circumstances where the goods were not invoiced or shipped to Australia during the investigation period. In this circumstance, please provide details of any expenses already incurred with respect to the goods shipped outside of the investigation period,*

For tender sales, the Commission considers the contract date will normally be taken to be the date of sale. To ensure that the Commission can make a proper assessment of date of sale, we request the contract date, invoice date and delivery date. If you consider that a date other than the contract date is the appropriate date of sale, please provide a response outlining your reasons for this.

B-1 For each customer in Australia to whom you shipped goods in the investigation period list:

name;

address;

contact name and phone/fax number where known; and

trade level (for example: distributor, wholesaler, retailer, end user, original equipment).

Name	**ABB Australia Pty Limited ("ABB AU")**
Address	**Bapaume Road Moorebank New South Wales 2170 Australia**
Contact name and phone/fax	**Julian Guild**
Trade level	**Importer**

B-2 For each customer identified in B1 please provide the following information.

(a) Describe how the goods are sent to each customer in Australia, including a diagram if required.

ABB CQ shipped the goods to ABB AU under [CONFIDENTIAL TEXT DELETED – shipping terms] terms during the POI. This involves ABB CQ arranging for the goods to be shipped from its factory to the

Chongqing river wharf by truck, then from Chongqing port to Shanghai port by barge. The transformers are then exported from Shanghai port for delivery to the Australian port according to the terms of the contract with [CONFIDENTIAL TEXT DELETED – Australian customer/s]

ABB CQ understands that [CONFIDENTIAL TEXT DELETED – movement of the goods in Australia]

A diagram illustrating this sales route is set out below:

[CONFIDENTIAL TEXT DELETED – distribution chain diagram]

(b) Identify each party in the distribution chain and describe the functions performed by them. Where commissions are paid indicate whether it is a pre or post exportation expense having regard to the date of sale.

[CONFIDENTIAL TEXT DELETED – details of Australian sales]

ABB CQ is responsible for the production and testing (including assembly/disassembly) of the GUC. Under [CONFIDENTIAL TEXT DELETED – shipping terms], once production is completed, ABB CQ arranges for [CONFIDENTIAL TEXT DELETED – details of transportation arrangement]

[CONFIDENTIAL TEXT DELETED – role of the Australian customer/s] involved in the distribution chain as the Australian importer.

(c) Explain who retains ownership of the goods at each stage of the distribution chain. In the case of DDP sales, explain who retains ownership when the goods enter Australia.

All exports were made at [CONFIDENTIAL TEXT DELETED – shipping term] level. [CONFIDENTIAL TEXT DELETED – details of shipping arrangement]

(d) Describe any agency or distributor agreements or other contracts entered into in relation to the Australian market (supply copy of the agreement if possible).

[CONFIDENTIAL TEXT DELETED – details of Australian customer/s]

Apart from the sales agreement between ABB CQ and [CONFIDENTIAL TEXT DELETED – Australian customer/s], ABB CQ has not entered into any agency or distributor agreements or other contracts in relation to the Australian market.

(e) Explain in detail the process by which you negotiate price, receive orders, deliver, invoice and receive payment. If export prices are determined through a tender process, supply copies of winning tender bids.

[CONFIDENTIAL TEXT DELETED – detailed sales and tendering process]

(f) State whether your firm is related to any of its Australian customers. Give details of any financial or other arrangements (eg free goods,

rebates, or promotional subsidies) with the customers in Australia (including parties representing either your firm or the customers).

[CONFIDENTIAL TEXT DELETED – relationship with Australian customers]

(g) Details of the forward orders of the goods under consideration (include quantities, values and scheduled shipping dates).

Please refer to Attachment 12 - Forward orders spreadsheet [CONFIDENTIAL ATTACHMENT].

B-3 Do your export selling prices vary according to the distribution channel identified? If so, provide details. Real differences in trade levels are characterised by consistent and distinct differences in functions and prices.

Not applicable, as there is only one distribution channel.

B-4 Prepare a spreadsheet named “Australian sales” listing all shipments (i.e. transaction by transaction) to Australia of the goods under consideration in the investigation period.

Where a contract has been won during the investigation period but the goods are not yet shipped, provide details of these goods with any expenses incurred to date and the scheduled delivery date specified in the contract.

You must provide this list in electronic format. Include the following export related information:

Column heading	**Explanation**
Customer name	names of your customers
Level of trade	the level of trade of your customers in Australia
Model/product code	code used in your records for the model/grade/type identified. Explain the product codes in your submission.
Power rating (MVA)	Where more than one unit of the goods is shipped and the power rating differs between units, please list these units separately.
Voltage ratio (kV)	Where more than one unit of the goods is shipped and the voltage ratio differs between units, please list these units separately.
Contract number	Show order confirmation, contract or purchase order number
Contract date	Date contract was agreed with Australian customer – ensure all contracts entered in to during the investigation period are included, regardless of whether the goods were invoiced or delivered to your Australian customers outside of the investigation period
Invoice number	invoice number

Invoice date	Invoice date - ensure details of all invoiced goods during the investigation period are included, regardless of whether the contract was agreed or the goods were shipped outside of the investigation period.
Delivery date	if the delivery date differs from the invoice date please specify. If delivery has not occurred, include the scheduled delivery date set out in the contract for sale.
Shipping terms	Delivery terms eg. CIF, C&F, FOB, DDP (in accordance with Incoterms)
Payment terms	agreed payment terms eg. 60 days=60 etc
Quantity	Quantity in units shown on the invoice.
Gross invoice value	gross invoice value shown on invoice *in the currency of sale*, *excluding taxes.*
Discounts on the invoice	if applicable, the amount of any discount deducted on the invoice on each transaction. If a % discount applies show that % discount applying in another column.
Other charges	any other charges, or price reductions, that affect the net invoice value. Insert additional columns and provide a description.
Invoice currency	the currency used on the invoice
Exchange rate	Indicate the exchange rate used to convert the currency of the sale to the currency used in your accounting system
Net invoice value in the currency of the exporting country	the net invoice value expressed in your domestic currency as it is entered in your accounting system
Rebates or other allowances	the amount of any deferred rebates or allowances paid to the importer in the currency of sale
Other discounts	the actual amount of any other discount not deducted from the invoice. Show a separate column for each type of discount.
Ocean freight**	the actual amount of ocean freight incurred on each export shipment listed. If the goods are not yet shipped, provide an estimate of ocean freight.
Marine insurance	Amount of marine insurance. If the goods are not yet shipped, provide an estimate of marine insurance.
FOB export price**	the free on board price at the port of shipment.
Packing*	Packing expenses
Inland transportation costs*	inland transportation costs included in the selling price. For export sales this is the inland freight from factory to port in the country of export. If the goods are not yet shipped, provide an

	estimate of inland freight.
Handling, loading & ancillary expenses*	handling, loading & ancillary expenses. For example, terminal handling, export inspection, wharfage & other port charges, container tax, document fees & customs brokers fees, clearance fees, bank charges, letter of credit fees, & other ancillary charges incurred in the exporting country.
Warranty & guarantee expenses*	warranty & guarantee expenses
Installation expenses	Any expense associated with the installation of the goods if included in the contract
Technical assistance & other services*	expenses for after sale services, such as technical assistance or installation costs.
Commissions*	Commissions paid. If more than one type is paid insert additional columns of data. Indicate in your response to question B2 whether the commission is a pre or post exportation expense having regard to the date of sale.
Other factors*	**any other** costs, charges or expenses incurred in relation to the exports to Australia (include additional columns as required). See question B5.

** FOB export price and Ocean Freight:

FOB export price: An FOB export price must be calculated for each shipment - regardless of the shipping terms. FOB price includes inland transportation to the port of exportation, inland insurance, handling, and loading charges. It excludes post exportation expenses such as ocean freight and insurance. Use a formula to show the method of the calculation on each line of the export sales spreadsheet.

Ocean freight: as ocean freight is a significant cost it is important that the actual amount of ocean freight incurred on each exportation be reported. If estimates must be made you must explain the reasons and set out the basis - estimates must reflect changes in freight rates over the investigation period.

Freight allocations must be checked for consistency.

* All of these costs are further explained in section E-1.

Please see Attachment 13 - Australian Sales spreadsheet. [CONFIDENTIAL ATTACHMENT]

[CONFIDENTIAL TEXT DELETED – details of Australian sales]

[CONFIDENTIAL ATTACHMENT]

[CONFIDENTIAL ATTACHMENT]

B-5 If there are any other costs, charges or expenses incurred in respect of the exports listed above which have not been identified in the table above, add a column (see “other factors” in question B-4) for each item, and provide a description of each item. For example, other selling expenses (direct or indirect) incurred in relation to the export sales to Australia.

The company reports the credit cost under the column of “other cost”.

Please refer to Attachment 15 [CONFIDENTIAL ATTACHMENT] for the calculation of credit costs.

ABB CQ's SAP accounting system allows for identification of expenses on a detailed basis. Some selling expenses are related only to export sales; some are related to domestic sales; and some are not differentiated (or not able to be differentiated) as between export and domestic sales.

The need for adjustment for any such factors will depend on the normal value methodology used, and how it is applied. ABB CQ will explain its cost accounting and how its CTMS information has been provided in this EQ, at the verification, and in further submissions, as may be necessary.

B-6 For each type of discount, rebate, allowance offered on export sales to Australia:

- provide a description; and
- explain the terms and conditions that must be met by the importer to obtain the discount.

Where the amounts of these discounts, rebates etc are not identified on the sales invoice, explain how you calculated the amount shown in your response to question B4. If they vary by customer or level provide an explanation.

[CONFIDENTIAL INFORMATION DELETED – information about price discounts]

B-7 If you have issued credit notes (directly or indirectly) to the customers in Australia, in relation to the invoices listed in the detailed transaction by transaction listing in response to question B4, provide details of each credit note if the credited amount has **not** been reported as a discount or rebate.

During the POI, ABB CQ did not issue credit notes (directly or indirectly) to [CONFIDENTIAL TEXT DELETED – details of sales arrangements]

B-8 If the delivery terms make you responsible for arrival of the goods at an agreed point within Australia (eg. delivered duty paid), insert additional columns in the spreadsheet for all other costs incurred. For example:

Import duties	Amount of import duty paid in Australia
Inland transport	Amount of inland transportation expenses within Australia included in the selling price
Other costs	Customs brokers, port and other costs incurred (itemise)

All exports during investigation period were in [CONFIDENTIAL TEXT DELETED – shipping term] term, thus ABB CQ was [CONFIDENTIAL

TEXT DELETED – details of shipping term]

B-9 For two contracts where the goods were also shipped to Australia during the investigation period, please provide a complete set of all documentation related to the export sale. For example:

- the contract between your company and your Australian customer;
- the commercial invoice;
- bill of lading, export permit;
- freight invoices in relation to movement of the goods from factory to Australia, including inland freight contract;
- marine insurance expenses; and
- letter of credit, and bank documentation, proving payment.

The Commission will select additional shipments for payment verification at the time of the visit.

Please refer to Attachment 16 and Attachment 17 for two example sets of documentation. These relate to project numbers [CONFIDENTIAL TEXT DELETED – details of Australian projects]. [CONFIDENTIAL ATTACHMENTS]

SECTION C
EXPORTED GOODS & LIKE GOODS

C-1 Fully describe all of the goods you have exported to Australia during the investigation period. Include specification details and any technical and illustrative material that may be helpful in identifying, or classifying, the exported goods.

The power transformers exported to Australia by ABB CQ during the investigation period were as follows:

Sales Order	Product Description	Technical description	Quantity
[CONFIDENTIAL TEXT DELETED – details of the goods sold to Australia]			

Insulating oil is used to run factory test prior to shipment but is not included when sold to Australia.

Each unit is unique. Each unit is individually designed and engineered to meet the customer's specifications and the constraints and adequacies that ABB CQ/ABB AU consider are relevant to the requirement in performance and pricing terms.

ABB CQ considers that there are no relevant "like goods" for margin calculation purposes.

C-2 List each unique unit of goods exported to Australia (these types should cover all types listed in spreadsheet **"Australian sales" –** see section B of this questionnaire).

EXPORT TYPE	Mega volt amperes (MVA)	Kilo volts (kV)
Product code of each unique unit of the goods exported to Australia		

Please refer to the table in C-1 for the required information.

Individual specifications for each unit could only be identified by providing full specifications for all exported units. If further details are required ABB CQ suggests that ADC select a sample of one or two export units to observe individual specifications

C-3 List each unique unit of power transformer sold on the domestic market during the investigation period.

DOMESTIC TYPE	Mega volt amperes (MVA)	Kilo volts (kV)
Product code of each unique unit of the goods sold domestically		

There were [CONFIDENTIAL TEXT DELETED – number] transformers sold on the domestic market during the POI which were within the general scope of the description of the goods under consideration. [CONFIDENTIAL TEXT DELETED – details of the goods sold on domestic market]

The information is as follows:

Product Description	Mega volt amperes (MVA)	Kilo volts (kV)
[CONFIDENTIAL TEXT DELETED – details of the goods sold on domestic market		

C-4 Please provide any technical and illustrative material that may be helpful in identifying or classifying the goods that your company sells on the domestic market.

Please refer to Attachments 18 and 19 for the ABB CQ product brochure.

Further, please refer to Attachment 20 for a demonstration of the key specifications set out in the National Standard relating to the power transformers sold by ABB CQ on the domestic market.

SECTION D
DOMESTIC SALES

This section seeks information about the sales arrangements and prices in the domestic market of the country of export.

The Commission's preliminary view of normal value:

The Commission considers that it may not be appropriate to determine normal values in accordance with section 269TAC(1) of the Act, using your domestic sales as adjusted for proper comparison with export sales, as the goods under consideration are capital goods that are manufactured to order.

The Commission seeks information on your domestic sales for the purpose of determining profit so that a normal value can be properly constructed pursuant to section 269TAC (2)(c), using your cost to make and sell plus amounts for selling, general and administrative expenses and profit. If you consider that this is appropriate, ***you do not need to complete Section E (fair comparison) of this questionnaire****.*

If you consider that it is appropriate for the Commission to determine normal values pursuant to section 269TAC (1) of the Act, ***please ensure you complete Section D, Section E and Section F of this questionnaire****.*

Information requested in relation to domestic sales:

In Section B, the Commission requests information in relation to your export sales to Australia. The Commission requested the following:

- *details of all invoiced sales made during the investigation period; and*
- *details of all tenders won during the investigation, regardless of whether the goods were invoiced and delivered outside of the investigation period. In these circumstances, the Commission requested that you provide an estimate of when the goods will be delivered to your Australian customers.*

In relation to domestic sales, the Commission requests that you provide details of ALL of your invoiced sales during the investigation period. You ***do not need*** *to provide details of tenders that were won during the investigation period but invoiced outside of the investigation period.*

If there is an extraordinarily large volume of sales data and you are unable to provide the complete listing electronically you ***must*** *contact the case officer* ***before*** *completing the questionnaire. If the case officer agrees that it is not possible to obtain a complete listing he or she will consider a method for sampling that meets the Commission requirements. If agreement cannot be reached as to the appropriate method the Commission may not visit your company.*

*If you do not have any domestic sales of like goods you must contact the case officer who will explain the infor*mation the Commission *requires for determining a normal value using alternative methods.*

ABB CQ agrees with the Commission that there are no like goods sold in the domestic market of ABB CQ for normal value comparison purposes. Accordingly the normal value should be determined in accordance with Section 269TAC(2)(c).

D-1 Provide:

- a detailed description of your distribution channels to domestic customers, including a diagram if appropriate;
- information concerning the functions/activities performed by each party in the distribution chain; and
- a copy of any agency or distributor agreements, or contracts entered into.

If any of the customers listed are associated with your business, provide details of that association. Describe the effect, if any, that association has upon the price.

[CONFIDENTIAL TEXT DELETED – details of domestic sales].

Please refer to ABB CQ's response to D-3 below.

D-2 Do your domestic selling prices vary according to the distribution channel identified? If so, provide details. Real differences in trade levels are characterised by consistent and distinct differences in functions and prices.

[CONFIDENTIAL TEXT DELETED – details of domestic sales and the distribution chain/s involved]

ABB CQ produces three broad categories of transformer – transmission/utilities transformers, power plant transformers and industrial transformers. In general terms the selling price is determined by the type, specification and cost of the power transformer concerned and the market condition.

D-3 Explain in detail the sales process, including:

- the way in which you set the price, receive orders, make delivery, invoice and finally receive payment; and the terms of the sales; and
- whether price includes the cost of delivery to customer.

If sales are in accordance with price lists, provide copies of the price lists.

In most cases the business model for domestic sales is through public bidding with the successful tenderer decided through a tender evaluation process.

Before a project goes out for tender, the potential customer must obtain regulatory project approval. [CONFIDENTIAL TEXT DELETED – details of domestic sales process]

Once the project is approved the potential customer will release the official tender specifications and ask eligible suppliers to submit their technical and commercial offers.

During the tender process, [CONFIDENTIAL TEXT DELETED – details of domestic sales process]

After winning the contract, ABB CQ and the customer will sign the contract. [CONFIDENTIAL TEXT DELETED – details of domestic sales and production process]

Once production is complete, ABB CQ complies with the delivery terms

under the contract. [CONFIDENTIAL TEXT DELETED – details of shipping terms]

Once the customer receives the goods, it will pay the price to ABB CQ as per the contract. For domestic customers, usually there will be a guarantee provision according to which the customer holds [CONFIDENTIAL TEXT DELETED - number]% of the contract price as a guarantee for a period of time after delivery. [CONFIDENTIAL TEXT DELETED – details of guarantee provision for domestic sales]

As the products vary greatly according to the specifications requested by different customers, price lists cannot be issued and are not issued.

D-4 Prepare a spread sheet named "**domestic sales**" listing **all** sales of like goods made during the investigation period. The listing must be provided on a CD-ROM. Include all of the following information.

Costs marked with * are explained in section E-2.

ABB CQ does not consider that individual transformers can be considered to be "like goods" for comparison purposes other than where they may have the same design. As indicated above, each transformer is tailor-made to the unique specifications of the customer.

However, ABB CQ refers you to Attachment 21 [CONFIDENTIAL ATTACHMENT] which provides the requested details for the [CONFIDENTIAL TEXT DELETED – number] units sold in China during the POI which fall within the broad description of the goods under consideration in this investigation.

[CONFIDENTIAL TEXT DELETED – details of domestic sales]

D-5 If there are any other costs, charges or expenses incurred in respect of the sales listed which have not been identified in the table in question D-4 above add a column for each item (see "other factors"). For example, certain other selling expenses incurred.

ABB CQ has reported the credit cost related to the reported domestic sales under column AA.

Please refer to Section E for further explanation regarding the costs and charges identified.

D-6 For each type of commission, discount, rebate, allowance offered on domestic sales of like goods:

- provide a description; and
- explain the terms and conditions that must be met by the customer to qualify for payment.

Where the amounts of these discounts, rebates etc are not identified on the sales invoice, explain how you calculated the amounts shown in your response to question D4.

If you have issued credit notes, directly or indirectly to the customers, provide details if the credited amount has **not** been reported as a discount or rebate.

[CONFIDENTIAL TEXT DELETED – commercial arrangements]

D-7 Select two domestic sales that are at the same level of trade as the export sales. Provide a complete set of documentation for those two sales. (Include, for example, the tender bid, the contract of sale, commercial invoice, discounts or rebates applicable, credit/debit notes, inland freight contract, bank documentation showing proof of payment.)

The Commission will select additional sales for verification at the time of our visit.

Please refer to Attachment 22 [CONFIDENTIAL ATTACHMENT] for the documents related to the domestic sale of the goods.

SECTION E
FAIR COMPARISON

As outlined in Section D, please complete Section E only if you would submit that the Commission should determine normal values pursuant to section 269TAC (1).

Section B sought information about the export prices to Australia and Section D sought information about prices on your domestic market for like goods (ie. the normal value).

Where the normal value and the export price are not comparable adjustments may be made. This section informs you of the fair comparison principle and asks you to quantify the amount of any adjustment.

As prices are being compared, the purpose of the adjustments is to eliminate factors that have unequally modified the prices to be compared.

To be able to quantify the level of any adjustment it will usually be necessary to examine cost differences between sales in different markets. The Commission must be satisfied that those costs are likely to have influenced price. In practice, this means that the expense item for which an adjustment is claimed should have a close nexus to the sale. For example, the cost is incurred because of the sale, or because the cost is related to the sale terms and conditions.

Conversely, where there is not a direct relationship between the expense item and the sale a greater burden is placed upon the claimant to demonstrate that prices have been affected, or are likely to have been affected, by the expense item. In the absence of such evidence the Commission may disallow the adjustment.

Where possible, the adjustment should be based upon actual costs incurred when making the relevant sales. However, if such specific expense information is unavailable cost allocations may be considered. In this case, the party making the adjustment claim must demonstrate that the allocation method reasonably estimates costs incurred.

A party seeking an adjustment has the obligation to substantiate the claim by relevant evidence that would allow a full analysis of the circumstances, and the accounting data, relating to the claim.

The investigation must be completed within strict time limits therefore you must supply information concerning claims for adjustments in a timely manner. Where an exporter has knowledge of the material substantiating an adjustment claim that material is to be available at the time of the verification visit. The Commission will not consider new claims made after the verification visit.

ABB CQ does not submit that the Commission should determine normal values pursuant to section 269TAC (1).

[CONFIDENTIAL INFORMATION DELETED – ABB CQ cost information]

E-1 Costs associated with export sales

(These cost adjustments will relate to your responses made at question B-4, '**Australian sales**')

1. Transportation

Explain how you have quantified the amount of inland transportation associated with the export sale (**"Inland transportation costs**"). Identify the general ledger account where the expense is located. If the amount has been determined from contractual arrangements, not from an account item, provide details and evidence of payment.

2. Handling, loading and ancillary expenses

List all charges that are included in the export price and explain how they have been quantified (**"Handling, loading & ancillary expenses"**). Identify the general ledger account where the expenses are located. If the amounts have been determined using actual observations, not from a relevant account item, provide details.

The various export related ancillary costs are identified in the table at question B4, for example:

- terminal handling;
- wharfage and other port charges;
- container taxes;
- document fees and customs brokers fees;
- clearance fees;
- bank charges, letter of credit fees
- other ancillary charges.

3. Credit

The cost of extending credit on export sales is not included in the amounts quantified at question B4. However, the Commission will examine whether a credit adjustment is warranted and determine the amount. Provide applicable interest rates over each month of the investigation period. Explain the nature of the interest rates most applicable to these export sales eg, short term borrowing in the currency concerned.

If your accounts receivable shows that the average number of collection days differs from the payment terms shown in the sales listing, *and if* export prices are influenced by this longer or shorter period, calculate the average number of collection days. See also item 4 in section E-2 below.

4. Packing costs

List material and labour costs associated with packing the export product. Describe how the packing method differs from sales on the domestic market, for each model. Report the amount in the listing in the column headed '**Packing'**.

5. Commissions

For any commissions paid in relation to the export sales to Australia:

- provide a description; and
- explain the terms and conditions that must be met.

Report the amount in the sales listing in question B-4 under the column headed **"Commissions".** Identify the general ledger account where the expense is located.

6. Warranties, guarantees, installation and after sales services

List the costs incurred. Show relevant sales contracts. Show how you calculated the expenses (**"Warranty & guarantee expenses", "Installation expenses"** and **"Technical assistance & other services"**), including the basis of any allocations. Include a record of expenses incurred. Technical services include costs for the service, repair, or consultation. Where these expenses are included in the contract for sale or closely related to the sales in question, an adjustment will be considered. Identify the ledger account where the expense is located.

7. Other factors

There may be other factors for which an adjustment is required if the costs affect price comparability – these are identified in the column headed **"Other factors"**. For example, other variable or fixed selling expenses, including salesmen's salaries, salesmen's travel expenses, advertising and promotion, samples and entertainment expenses. Your consideration of questions asked at Section G, concerning domestic and export costs, would have alerted you to such other factors.

8. Currency conversions

In comparing export and domestic prices a currency conversion is required. Fluctuations in exchange rates can only be taken into account when there has been a 'sustained' movement during the period of investigation (see article 2.4.1 of the WTO Agreement). The purpose is to allow exporters 60 days to adjust export prices to reflect 'sustained' movements. Such a claim requires detailed information on exchange movements in your country over a long period that includes the investigation period.

E-2 Costs associated with domestic sales

(These cost adjustments will relate to your responses made at question D-4, **"domestic sales"**)

The following items are not separately identified in the amounts quantified at question D-4. However you should consider whether any are applicable.

1. Physical characteristics

This adjustment recognises that differences, such as structure or design, mean that the goods are not identical. The Commission considers that the goods are unlikely to have identical models sold on the domestic market as they are large capital goods that are produced to order.

To support your claim that the Commission should determine normal values pursuant to section 269TAC (1), you will need to identify and quantify the physical or specification differences in order to ensure fair comparison.

The amount of the adjustment shall be based upon the market value of the difference, but where this is not possible the adjustment shall be based upon the difference in cost plus the gross profit mark-up (i.e. an amount for selling

general and administrative costs (S G & A) plus profit).

The adjustment is based upon actual physical differences in the goods being compared and upon the manufacturing cost data.

Using the table below, provide a list of the claimed comparable product sold on the domestic market. Describe in detail the specification differences between the comparable products. Also provide your claimed adjustment on the basis of this specification difference, stating the source of your data.

The Commission will seek to verify your claimed specification adjustments during the verification visit.

EXPORTED TYPE	DOMESTIC TYPE	DIFFERENCES	CLAIMED ADJUSTMENT
Product code, power rating and voltage ratio of each model of the goods exported to Australia	Product code, power rating and voltage ratio of comparable model sold on the domestic market of the country of export	Describe the specification differences in detail. If it is impractical to detail specification differences in this table refer to documents which outline differences	The claimed adjustment must be quantifiable and supported by evidence that is available for verification by the Commission

2. Import charges and indirect taxes

If exports to Australia:

- are partially or fully exempt from internal taxes and duties that are borne by the like goods in domestic sales (or on the materials and components physically incorporated in the goods), or
- if such internal taxes and duties have been paid and are later remitted upon exportation to Australia;

the price of like goods must be adjusted downwards by the amount of the taxes and duties.

The taxes and duties include sales, excise, turnover, value added, franchise, stamp, transfer, border, and excise taxes. Direct taxes such as corporate income tax are not included as such taxes do not apply to the transactions.

Adjustment for drawback is not made in every situation where drawback has been received. Where an adjustment for drawback is appropriate you must provide information showing the import duty borne by the domestic sales. (That is, it is not sufficient to show the drawback amount and the export sales quantity to Australia. For example, you may calculate the duty borne on domestic sales by quantifying the total amount of import duty paid and subtracting the duty refunded on exports to all countries. The difference, when divided by the domestic sales volume, is the amount of the adjustment).

In substantiating the drawback claim the following information is required:

- a copy of the relevant statutes/regulations authorising duty exemption or remission, translated into English;
- the amount of the duties and taxes refunded upon *exportation* and an explanation how the amounts were calculated and apportioned to the exported goods;

- an explanation as to how you calculated the amount of duty payable on imported materials is borne by the goods sold *domestically* but is not borne by the exports to Australia;

Substitution drawback systems

Annex 3 of the WTO Agreement on Subsidies provides: *"Drawback systems can allow for the refund or drawback of import duties on inputs which are consumed in the production process of another product and where the export of this latter product contains domestic inputs having the same quality and characteristics as those substituted for the imported inputs"*

If such a scheme operates in the country of export adjustments can also be made for the drawback payable on the substituted domestic materials, provided the total amount of the drawback does not exceed the total duty paid.

3. Level of trade

Question D-4 asks you to indicate the level of trade to the domestic customer. To claim an adjustment for level of trade differences you will need to quantify the amount by which level of trade influences price.

Trade level is the level a company occupies in the distribution chain. The trade level to which that company in turn sells the goods and the functions carried out distinguish a level of trade. Examples are producer, national distributor, regional distributor, wholesaler, retailer, end user, and original equipment.

It may not be possible to compare export prices and domestic prices at the same level of trade. Where relevant sales of like goods at the next level of trade must be used to determine normal values an adjustment for the difference in level of trade may be required where it is shown that the difference affects price comparability.

The information needs to establish that there are real trade level differences, not merely nominal differences. Real trade level differences are characterised by a consistent pattern of price differences between the levels and by a difference in functions performed. If there is no real trade level differences all sales are treated as being at the same level of trade.

A real difference in level of trade (may be adjusted for using either of the following methods:

(a) *costs arising from different functions*: the amount of the costs, expenses etc incurred by the seller in domestic sales of the like goods resulting from activities that would not be performed were the domestic sales made at the same level as that of the importer.

This requires the following information:

- a detailed description of each sales activity performed in selling to your domestic customers (for example sales personnel, travel, advertising, entertainment etc);
- the cost of carrying out these activities in respect of like goods;
- for each activity, whether your firm carries out the same activity

when selling to importers in Australia;

- an explanation as to why you consider that you are entitled to a level of trade adjustment.

or

(b) *level discount*: the amount of the discount granted to purchasers who are at the same level of trade as the importer in Australia. This is determined by an examination of price differences between the two levels of trade in the exporter's domestic market, for example sales of like goods by other vendors or sales of the same general category of goods by the exporter. For this method to be used it is important that a clear pattern of pricing be established for the differing trade levels. Such pattern is demonstrated by a general availability of the discounts to the level - isolated instances would not establish a pattern of availability.

4. Credit

The cost of extending credit on domestic sales is not included in the amounts quantified at question D-4. However, the Commission will examine whether a credit adjustment is warranted and determine the amount. An adjustment for credit is to be made even if funds are not borrowed to finance the accounts receivable.

The interest rate on domestic sales in order of preference is:

- the rate, or average of rates, applying on actual short term borrowings by the company; or
- the prime interest rate prevailing for commercial loans in the country for credit terms that most closely approximate the credit terms on which the sales were made; or
- such other rate considered appropriate in the circumstances.

Provide the applicable interest rate over each month of the investigation period.

If your accounts receivable shows that the average number of collection days differs from the payment terms shown in the sales listing, and if domestic prices are influenced by this longer or shorter period, calculate the average number of collection days.

Where there is no fixed credit period agreed at the time of sale the period of credit is determined on the facts available. For example, where payment is made using an open account system[1], the average credit period may be determined as follows:

1. Calculate an accounts receivable turnover ratio

This ratio equals the total credit sales divided by average accounts receivable.

---

1 Under an open account system, following payment the balance of the amount owing is carried into the next period. Payment amounts may vary from one period to the next, with the result that the amount owing varies.

(It is a measure of how many times the average receivables balance is converted into cash during the year).

In calculating the accounts receivable turnover ratio, credit sales should be used in the numerator whenever the amount is available from the financial statements. Otherwise net sales revenue may be used in the numerator.

An average accounts receivable over the year is used in the denominator. This may be calculated by:

- using opening accounts receivable at beginning of period plus closing accounts receivable at end of period divided by 2, or
- total monthly receivables divided by 12.

2. Calculate the average credit period

The average credit period equals 365 divided by the accounts receivable turnover ratio determined above at 1.

The resulting average credit period should be tested against randomly selected transactions to support the approximation.

The following items are identified in the amounts quantified at question D-4:

5. Transportation

Explain how you have quantified the amount of inland transportation associated with the domestic sales (**"Inland transportation Costs"**). Identify the general ledger account where the expense is located. If the amount has been determined from contractual arrangements, not from an account item, provide details and evidence of payment.

6. Handling, loading and ancillary expenses

List all charges that are included in the domestic price and explain how they have been quantified (**"Handling, loading and ancillary Expenses"**). Identify the general ledger account where the expense is located. If the amounts have been determined using actual observations, not from a relevant account item, provide details.

7. Packing

List material and labour costs associated with packing the domestically sold product. Describe how the packing method differs from sales on the domestic market, for each model. Report the amount in the listing in the column headed **"Packing"**.

8. Commissions

For any commissions paid in relation to the domestic sales:

- provide a description
- explain the terms and conditions that must be met.

Report the amount in the sales listing under the column headed "**Commissions"**. Identify the general ledger account where the expense is located.

9. Warranties, guarantees, installation expenses and after sales services

List the costs incurred. Show relevant sales contracts. Show how you calculated the expenses (**"Warranty & Guarantee expenses", "Installation expenses"** and **"Technical assistance & other services"**), including the basis of any allocations. Include a record of expenses incurred. Technical services include costs for the service, repair, or consultation. Where these expenses are included in the contract for sale or closely related to the sales in question, an adjustment will be considered. Identify the ledger account where the expense is located.

10. Other factors

There may be other factors for which an adjustment is required if the costs affect price comparability – these are identified in the column headed **"Other factors"**. List the factors and show how each has been quantified in per unit terms. For example:

- *inventory carrying cost*: describe how the products are stored prior to sale and show data relating to the average length of time in inventory. Indicate the interest rate used;
- *warehousing expense*: an expense incurred at the distribution point;
- *royalty and patent fees*: describe each payment as a result of production or sale, including the key terms of the agreement;
- *advertising*; and
- *bad debt*.

E-3 Duplication

In calculating the amount of the adjustments you must ensure that there is no duplication.

For example:

- adjustments for level of trade, quantity or other discounts may overlap, or
- calculation of the amount of the difference for level of trade may be based upon selling expenses such as salesperson's salaries, promotion expenses, commissions, and travel expenses.

Separate adjustment items must avoid duplication.

An adjustment for quantities may not be granted unless the effect on prices for quantity differences is identified and separated from the effect on prices for level of trade differences.

SECTION F
EXPORT SALES TO COUNTRIES OTHER THAN AUSTRALIA (THIRD COUNTRY SALES)

As outlined in Section D, the Commission considers that, given the nature of the goods under consideration, it may not be appropriate to determine normal values on the basis of domestic sales (pursuant to section 269TAC(1)), or sales to third countries (pursuant to section 269TAC(2)(d)).

Please complete Section F only if you would submit that it is appropriate for the Commission to determine normal values pursuant to section 269TAC(2)(d).

Your response to this part of the questionnaire may be used by the Commission to select sales to a third country that may be suitable for comparison with exports to Australia.

Sales to third countries may be used as the basis for normal value in certain circumstances. The Commission may seek more detailed information on particular third country sales where such sales are likely to be used as the basis for determining normal value.

ABB CQ does not submit that it is appropriate for the Commission to determine normal values pursuant to section 269TAC(2)(d).

F-1 Using the column names and column descriptions below provide a summary of your export sales to countries other than Australia.

Column heading	Explanation
Country	Name of the country that you exported like goods to over the investigation period.
Number of customers	The number of different customers that your company has sold like goods to in the third country over the investigation period.
Level of trade	The level of trade that you export like goods to in the third country.
Quantity	Indicate the number of units sold
Value of sales	Show net sales value to all customers in third country over the investigation period
Currency	Currency in which you have expressed data in column SALES
Payment terms	Typical payment terms with customer(s) in the country eg. 60 days=60 etc
Shipment terms	Typical shipment terms to customers in the third country eg CIF, FOB, ex-factory, DDP etc.

Supply this information in spreadsheet file named “Third country”

F-2 Please identify any differences in sales to third countries which may affect their comparison to export sales to Australia.

SECTION G
COSTING INFORMATION AND CONSTRUCTED VALUE

The information that you supply in response to this section of the questionnaire will be used for various purposes including:

- *testing the profitability of sales of like goods on the domestic market;*
- *determining a constructed normal value of the goods under consideration (the goods) - ie of the goods exported to Australia; and*
- *making certain adjustments to the normal value.*

You will need to provide the cost of production of both the exported goods (the goods) and for the like goods sold on the domestic market. You will also need to provide the selling, general, and administration costs relating to goods sold on the domestic market; the finance expenses; and any other expenses (eg. non-operating expenses not included elsewhere) associated with the goods.

In your response please include a worksheet showing how the selling, general, and administration expenses; the finance expenses; and any other expenses have been calculated.

Please provide costs associated to each of the export sales detailed at question B4 and domestic sales details in question D4.

For export sales, this will include costs associated with tenders that may be invoiced or delivered outside of the investigation period. Where these costs have not yet been incurred, please provide an estimate of these costs such as, for example, the cost you estimated at the time of bidding for the tender.

*For domestic sales, you only need to include **actual** costs incurred in relation to goods invoiced during the investigation period.*

At any verification meeting you must be prepared to reconcile the costs shown to the accounting records used to prepare the financial statements.

G-1. Production process and capacity

1. Describe the production process for the goods. Provide a flowchart of the process. Include details of all products manufactured using the same production facilities as those used for the goods. Also specify all scrap or by-products that result from producing the goods.

Please refer to Attachment 28 [CONFIDENTIAL ATTACHMENT] for the production flow chart of ABB CQ. The chart includes the major equipment used in each stage of production, the main raw materials and the scrap that results from production.

G-2. Provide information about your company's total production in the following table:

	PREVIOUS FINANCIAL YEAR	MOST RECENT FINANCIAL YEAR	INVESTIGATION PERIOD

A. Production capacity (eg capacity of units sold)*			
B. Actual production volume (eg capacity of units sold)			
C. Capacity utilisation (%) (B/A x 100)			

* Rather than showing a 'name-plate' optimal capacity it is more meaningful to show the maximum level of production that may reasonably be attained under normal operating conditions. For example assuming: normal levels of maintenance and repair; a number of shifts and hours of operation that is not abnormally high; and a typical production mix.

Provide this information on a spreadsheet named "**Production**".

Please refer to Attachment 29. [CONFIDENTIAL ATTACHMENT]

G-3. Cost accounting practices

1. Outline the management accounting system that you maintain and explain how that cost accounting information is reconciled to your audited financial statements.

[CONFIDENTIAL INFORMATION DELETED – details of ABB Chongqing cost accounting methods]

2 Is your company's cost accounting system based on standard (budgeted) costs? State whether standard costs were used in your responses to this questionnaire. If they were state whether all variances (ie differences between standard and actual production costs) have been allocated to the goods - and describe how those variances have been allocated.

[CONFIDENTIAL INFORMATION DELETED – details of ABB Chongqing cost accounting methods]

3 Provide details of any significant or unusual cost variances that occurred during the investigation period.

Not applicable, in that there have been no such variances.

4 Describe the profit/cost centres in your company's cost accounting system.

Please refer to Attachment 30 [CONFIDENTIAL ATTACHMENT] for the list of cost centres used by ABB CQ.

5 For each profit/cost centre describe in detail the methods that your company normally uses to allocate costs to the goods under consideration. In particular specify how, and over what period, expenses are amortised or depreciated, and how allowances are made for capital expenditures and other development costs.

The cost of materials is [CONFIDENTIAL INFORMATION DELETED – details of ABB Chongqing cost accounting methods]. Labour and overheads are allocated on the basis of [CONFIDENTIAL TEX DELETED –

allocation method used].

6 Describe the level of product specificity (models, grades etc) that your company's cost accounting system records production costs.

Production costs are recorded at the level of each sale order.

7 List and explain all production costs incurred by your company which are valued differently for cost accounting purposes than for financial accounting purposes.

Not applicable, in that no production costs incurred by ABB CQ are valued differently for cost accounting purposes than for financial accounting purposes.

8 State whether your company engaged in any start-up operations in relation to the goods under consideration. Describe in detail the start-up operation giving dates (actual or projected) of each stage of the start-up operation.

ABB CQ did not engage in any start-up operations.

9 State the total cost of the start-up operation and the way that your company has treated the costs of the start-up operation it its accounting records.

ABB CQ did not engage in any start-up operations.

G-4 Cost to make and sell on domestic market

This information is relevant to testing whether domestic sales are in the ordinary course of trade.[2]

1. Please provide (in the format shown in the table below) the actual unit cost to make and sell each model/type* (identified in section C) of the like goods sold on the domestic market. Provide this cost data for each unique unit of the goods invoiced during the investigation period.

   Prepare this information in a spreadsheet named "**Domestic CTMS**".

   Provide this information for each unique unit of the goods invoiced during the period of the investigation. For example, if one contract specifies production of two different types of the goods, provide this information for each type of the goods.

   Provide the information broken down into fixed and variable costs, and indicate the % total cost represented by fixed costs.

   If you are unable to supply this information in this format, please contact the case officer for this investigation at the address shown on the cover of this questionnaire.

   Please specify unit of currency.

   Please refer to Attachment 31. [CONFIDENTIAL ATTACHMENT]

2. Indicate the source of cost information (account numbers etc) and/or methods

[2] *The Commission applies the tests set out in s.269TAAD of the Customs Act 1901 to determine whether goods are in ordinary course of trade. These provisions reflect the WTO anti-dumping agreement – see Article 2.2.1.*

used to allocate cost to the goods. Provide documentation and worksheets supporting your calculations.

Please refer to Attachment 32 [CONFIDENTIAL ATTACHMENT] for the supporting documents for the cost of like goods in the domestic market. It shows how the UCM (listing of raw materials) and direct labour are tied to the FCM.

The figures in yellow highlights in Attachment 31 [CONFIDENTIAL ATTACHMENT] can be fully reconciled with the supporting documents from the accounting system.

The methodology applied for calculating SG&A is provided at Attachment 33. [CONFIDENTIAL ATTACHMENT]

G-5 Cost to make and sell goods under consideration (goods exported to Australia)

The information is relevant to calculating the normal values based on costs. It is also relevant to calculating certain adjustments to the normal value.

Prepare this information in a spreadsheet named "**Australian CTMS**".

Provide this information for all goods invoiced during the investigation period and for all goods the subject of a contract that was entered into during the investigation period, but invoiced or delivered outside of the investigation period. Where actual costs are not yet incurred, provide an estimate of these costs, such as for example, the estimate of the costs that formed the basis of your winning tender bid.

Provide this information for each unique unit of the goods contracted for sale or invoiced during the period of the investigation. For example, if one contract specifies production of two different types of the goods, provide this information for each type of the goods.

Provide the information broken down into fixed and variable costs, and indicate the % total cost represented by fixed costs.

If you are unable to supply this information in this format, please contact the case officer for this investigation at the address shown on the cover of this questionnaire.

Please specify unit of currency.

Please refer to Attachment 34 [CONFIDENTIAL ATTACHMENT] for the cost to make and sell of the goods exported to Australia during the POI.

In accordance with the EQ instruction, ABB CQ has also reported the cost to make and sell of goods which were exported outside of the POI pursuant to a contract entered into or an invoice issued during the POI in Attachment 35 – Australian CTMS (non-POI). [CONFIDENTIAL ATTACHMENT]

The methodology applied for calculating SG&A is provided at Attachment 33. [CONFIDENTIAL ATTACHMENT]

1 Where there are cost differences between goods sold to the domestic market and those sold for export, give reasons and supporting evidence for these differences.

Different CTMs apply to individual power transformers due to

differences in design, engineering, material and labour etc.

The CTM for the goods sold on domestic market and those exported to Australia were calculated on the same basis.

Cost differences below the CTM line relate to commission, warranty and selling expenses as discussed in Section E above.

Further, the total freight amount (export inland freight, ocean freight and handling, etc) is stated in the Australian CTMS spreadsheet. No freight was incurred for the domestic sales of the goods.

2 Give details and an explanation of any significant differences between the costs shown, and the costs as normally determined in accordance with your general accounting system. Reference should be made to any differences arising from movements in inventory levels and variances arising under standard costing methods.

Not applicable, in that there are no differences between the costs shown and the costs normally determined in accordance with the general accounting system.

3 In calculating the unit cost to make and sell, provide an explanation if the allocation method used (eg number, or weight etc) to determine the unit cost differs from the prior practice of your company.

There are no cost differences between the allocation method used in the table and the prior practice of the company.

G-6 Major raw material costs

List major raw material costs, which individually account for 10% or more of the total production cost.

For these major inputs:

- identify materials sourced in-house and from associated entities;
- identify the supplier; and
- show the basis of valuing the major raw materials in the costs of production you have shown for the goods (eg market prices, transfer prices, or actual cost of production).

Where the major input is produced by an associate of your company the Commission will compare your purchase price to a normal market price. If the associate provides information on the cost of production for that input such cost data may also be considered.

Normal market price is taken to be the price normally available in the market (having regard to market size, whether the input is normally purchased at 'spot prices' or under long term contracts etc).

The term associate is defined in section 269TAA of the *Customs Act*. Included in that definition are companies controlled by the same parent company (a company that controls 5% or more of the shares of another is taken to be an associated company); companies controlled by the other company; and

companies having the same person in the board of directors.

Important note: If the major input is sourced as part of an integrated production process you should provide detailed information on the full costs of production of that input.

The main raw materials used for production of the goods are [CONFIDENTIAL TEXT DELETED – raw materials].

Please refer to Attachment 36 [CONFIDENTIAL ATTACHMENT] for the purchase information of the inputs.

These major inputs are not purchased by ABB CQ from related suppliers.

SECTION H
EXPORTER'S DECLARATION

☑ I hereby declare that ABB Chongqing Transformer Co. Ltd. (company) did, during the period of investigation export the goods under consideration and have completed the attached questionnaire and, having made due inquiry, certify that the information contained in this submission is complete and correct to the best of my knowledge and belief.

☐ I hereby declare that.....(company) did not, during the period of investigation, export the goods under consideration and therefore have not completed the attached questionnaire.

Name : Zhao YongZhan

Signature : Yongzhan Zhao

Position in Company : General Manager

Date 2013.09.23

ABB CHONGQING TRANSFORMER COMPANY LIMITED 重庆ABB变压器有限公司 500100108568

N O N - C O N F I D E N T I A L

SECTION I
CHECKLIST

This section is an aid to ensure that you have completed all sections of this questionnaire.

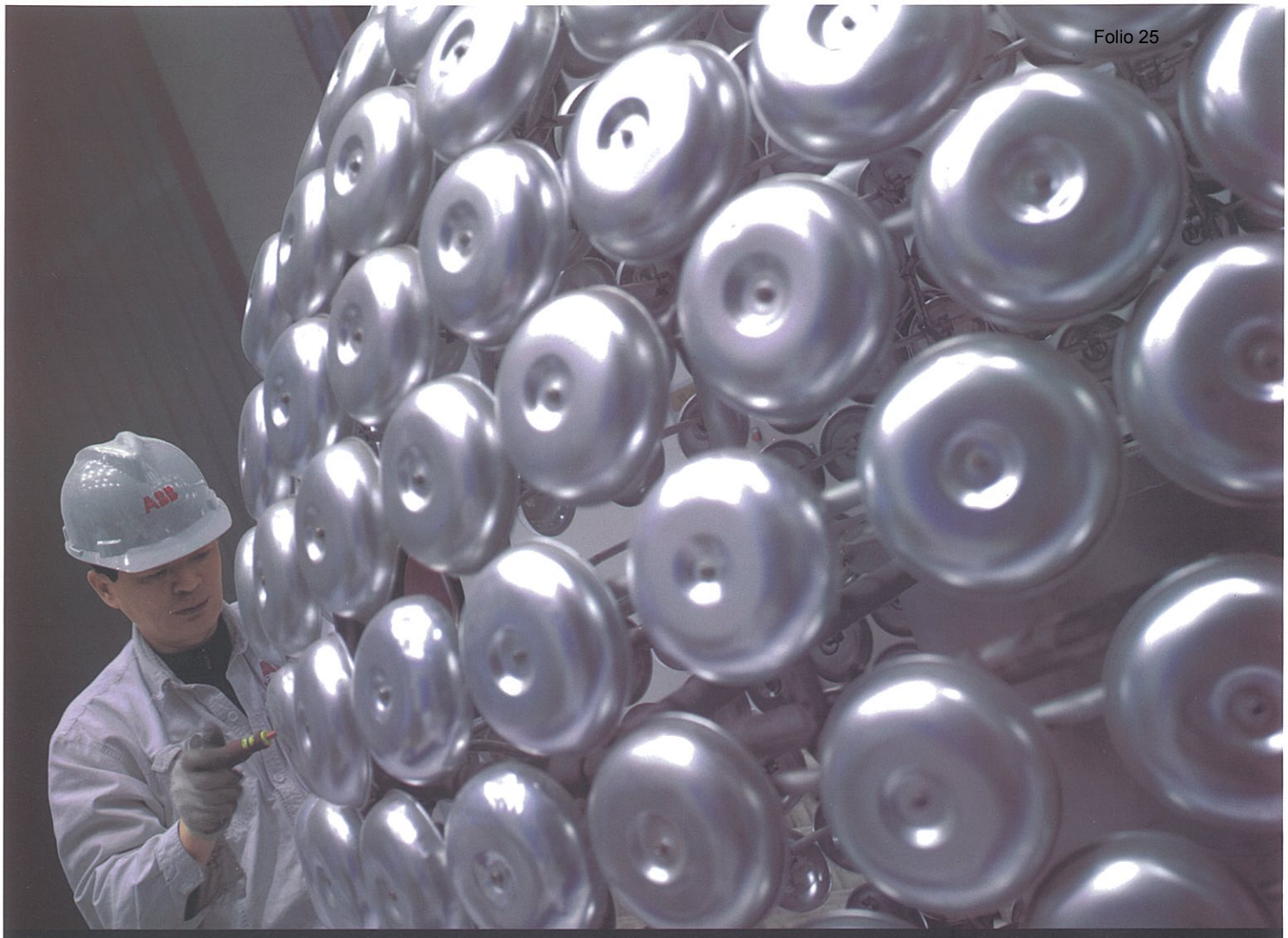
Section	Please tick if you have responded to all questions
Section A – general information	☑
Section B – export price	☑
Section C – like goods	☑
Section D – domestic price	☑
Section E – fair comparison	☑
Section F – exports to third countries	☑
Section G – costing information	☑
Section H – declaration	☑

Electronic Data	Please tick if you have provided spread sheet
INCOME STATEMENT	☑
TURNOVER – sales summary	☑
AUSTRALIAN SALES – list of sales to Australia	☑
DOMESTIC SALES – list of all domestic sales of like goods	☑
THIRD COUNTRY – third country sales	**NA**
PRODUCTION – production figures	☑
DOMESTIC COSTS – costs of goods sold domestically	☑
AUSTRALIAN COSTS – costs of goods sold to Australia	☑

Attachment 5 - ABB Group annual report 2012

Accessible at:

http://www.abb.com/cawp/abbzh259/52660b65466a49a7c1257928002d44ab.aspx



高效可靠的电力传输
Reliable & efficient power transmission
电力变压器(重庆)
Power Transformers (Chongqing)

用电力与效率
创造美好世界™

ABB

我们的愿景
Our vision

作为全球领先的工程公司，我们以可持续的方式帮助客户更加有效地使用电力，提高生产效率，并降低对环境的不良影响。

As one of the world's leading engineering companies, we help our customers to use electric power effectively, to increase industrial productivity and to lower environmental impact in a sustainable way.

ABB 变压器在重庆
ABB transformers in Chongqing

重庆ABB变压器有限公司成立于1998年，作为中国电气百强企业之一，公司已发展成为ABB全球最大的变压器制造基地，专注于500kV及以上大型电力变压器、电抗器及高压直流换流变压器的设计与生产，年生产能力超过50,000MVA。

公司的管理体系完全按照ABB对全球所有公司的统一要求执行，质量与安全管理体系完全与国际接轨。迄今为止，公司已成功参与众多国内外大型项目工程的建设。

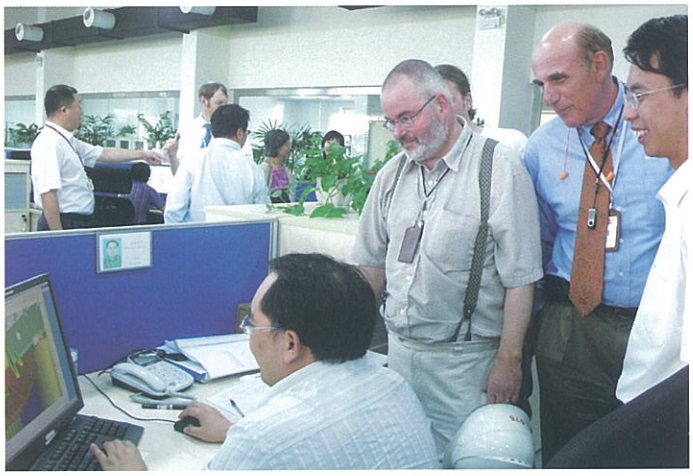
重庆ABB变压器有限公司具有运输大型变压器的良好条件，并有专用重件公路直达重庆九龙坡港口，通过黄金水道—长江，我们的变压器可以方便快捷地运送到世界各地。

As one of China's Top 100 Electric Companies, the ABB power transformer factory in Chongqing was established in 1998, and has developed into ABB's largest transformer factory in the world. The factory is focused on the design and manufacture of large power transformers, shunt reactors and HVDC (High Voltage Direct Current) converter transformer with voltages of 500kV and above, with an annual output of over 50,000 MVA.

The management system implemented in the factory is also world-class and fully complies with ABB global standards. To date, the ABB power transformer factory in Chongqing has successfully participated in the construction of many critical projects both in China and in other countries.

The factory has favorable advantages to transport large power transformers. Connecting with Chongqing' s largest dock – Jiulongpo by a special road built for heavy transportation, our transformers can be delivered to the world through the water channel – Yangtze River.

变压器设计中心
Transformer design center



重庆ABB变压器有限公司，也是ABB全球的变压器设计中心，拥有一批具有ABB设计理念的高级工程师和工程技术人员，代表着ABB全球领先的技术水平。借助ABB全球变压器设计平台与标准，为客户提供量身定做的产品，提供适应各种苛刻环境和复杂要求的技术解决方案等，同时还支持ABB在其它国家的设计及技术服务需求。

运用ABB专有的共同技术 – 变压器之星(TrafoStar™)，对不同项目进行单台设计，以满足客户各种不同需求。共同技术运用于全球所有的ABB变压器公司，是ABB各变压器生产厂家和研究机构先进技术的结晶。

设计中心与ABB集团各技术中心在线联网，采用同一个设计软件，Pro/E三维设计平台开发设计，保证产品设计完全符合ABB技术标准，并共享最新研发成果。

As the global transformer design center for ABB, the ABB power transformer factory in Chongqing is staffed by a dedicated and skilled team of senior engineers and technicians specializing in the ABB design concepts. The Design Center, sharing ABB's global transformer design platform and standards, focuses on tailoring designs and solving highly complex problems for the customers and also supports the design needs of ABB organizations in other countries.

Customized solutions are specifically made for each of our customers using ABB Common Technology – TrafoStar™, which is based on the best ABB practices and applied to all ABB transformer factories worldwide.

The Design Center at ABB in Chongqing has online link with other ABB technology centers around the world, sharing the same design software and the latest research results like Pro/E 3-D design platform to ensure full compliance with ABB technical standards.

特高压试验中心
Ultra high voltage test center

试验能力是决定变压器生产厂产能的关键因素之一，公司新建的特高压试验中心装备了一系列先进试验设备和测量系统，能对额定电压超过800kV直流和1000kV交流的特高压变压器和电抗器进行试验。试验中心装备的高精度损耗测量系统和高效双屏蔽系统，能最大限度的降低变压器损耗测量过程中的误差，以及在试验时有效降低背景噪音。

新的特高压试验中心令重庆ABB变压器有限公司生产和试验能力得到极大幅度的提高，公司已具备±800千伏直流换流变压器及1000千伏交流变压器和电抗器等全系列特高压产品的生产、试验能力。

Testing capability is one of the key factors deciding the transformer factory's production capacity. The factory has a new ultra high voltage test center, with the latest testing facilities for di-electric tests of transformers and reactors up to 800 kV DC and 1000 kV AC voltage level. The accurate losses measuring system and double shielding system help to decrease the measured losses tolerance and to reduce the background noise during testing.

The test center can offer complete test services for transformers and reactors rated up to 1000 kV AC and ±800 kV DC level. With its full operation, the manufacturing and testing capacity of the factory is greatly improved.

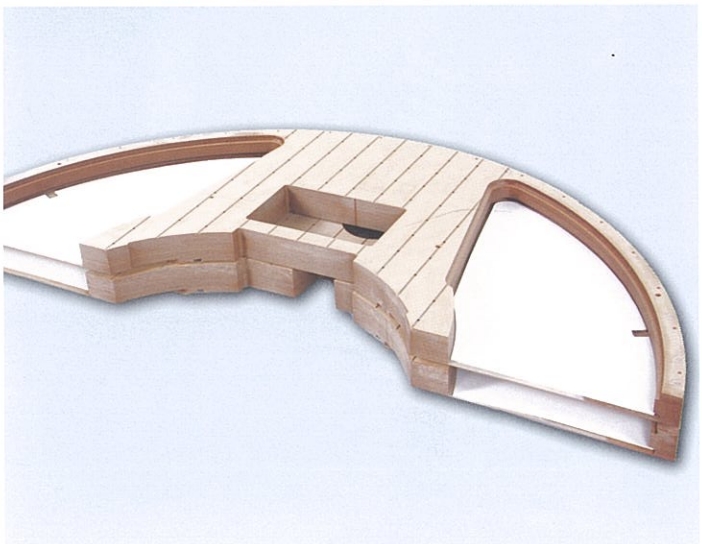
绝缘制造中心
Insulation kit center

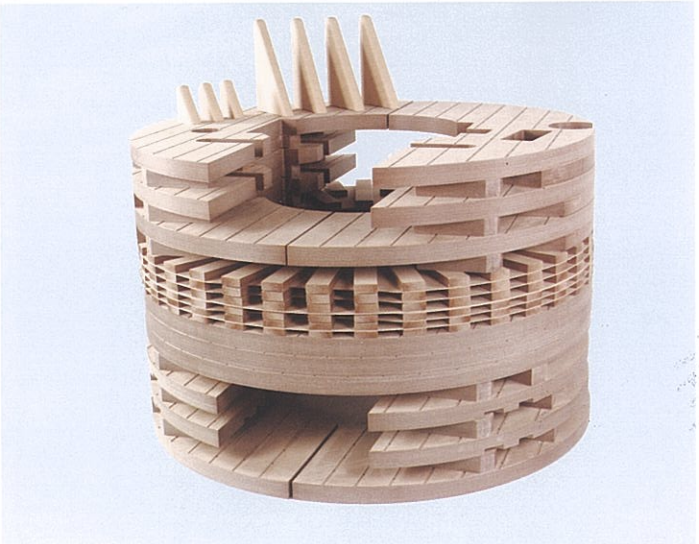
变压器绝缘件对变压器的电气性能和机械稳定性起着重要的作用，其使用寿命也直接影响变压器本身的使用寿命。为此，ABB在重庆建成全球最大的绝缘件制造中心，生产能力达90GVA，为ABB亚太地区的变压器工厂提供一流质量的成套绝缘件。

绝缘制造中心的原材料全部使用ABB优质进口纸板，其质量优良，收缩率小且稳定，有很好的电气性能和机械强度，为变压器稳定的性能提供可靠保证。

Insulation components have great bearing on the electrical performance and mechanical stability of transformers. Their life span has direct impact on that of transformers. The largest insulation kit center of ABB in Chongqing supplies first-class insulation components to ABB transformer manufactures in the Asia Pacific Region with an annual output of 90,000 MVA.

The insulation kit center imports pressboards in the form of raw materials, with high quality, low and stable shrinkage and great electric performance and mechanical intensity, which help to ensure the performance stabilities of transformers.





卓越质量管理
Excellent quality management

ABB追求卓越质量。质量是一种态度，一种标准，一种文化，一种为了追求卓越而不遗余力的付出。质量贯穿于公司的每个岗位，包括设计、采购、制造、质量控制、客户服务、销售、项目管理、市场传播、品牌品牌推广等各个环节。

严格的材料采购及供应商的选择，完善的质量管理体系，以客户为中心的项目管理，以及贴心快捷的客户服务，为实现我们最终的目标提供有力保障 - 优质、及时、经济地为我们的客户提供产品与服务。

ABB pursues outstanding quality. Quality is an attitude, a standard, a culture, and an endeavor to walk an extra mile in pursuing for the best in class. Quality is a requirement in every job we do in the company, including designing, material sourcing, manufacturing, quality control, customer service, sales and marketing, project management, brand promotion and communication.

Strict material purchasing and supplier selection, a full range of quality management systems, project management with customer focus, prompt and convenient customer's service help to achieve our quality target – "Delivering our products and services on-quality, on-time and on cost."

产品组合
Product portfolio

重庆ABB变压器有限公司拥有世界上最先进的生产和试验设备，为客户提供优质可靠的全系列大型电力变压器、电抗器及相关服务。

Equipped with the most advanced manufacturing and testing facilities, ABB Chongqing Transformer Co., Ltd. provides complete large power transformers, reactors and relevant services.

产品范围
Product portfolio

- 大型电力变压器 Large power transformers
- 并联电抗器 Shunt reactor
- 高压直流换流变压器 HVDC converter transformer
- 成套绝缘件 Insulation kits
- 变压器服务及现场维修 Transformer services & site repair
- 产品试验服务 Testing services

产品容量及电压
Product rating and voltage

- 最大容量 Maximum rating: 1200 MVA
- 最高电压 Maximum voltage: ±800 kV DC / 1000 kV AC

电力变压器
Power Transformer

重庆ABB变压器有限公司采用高质量的原材料和优良的工艺进行生产，变压器箱体为平底方形全密封结构，现场安装简便，不需要吊芯，避免器身在现场受潮和污染。

为保证变压器三十年或更长的使用寿命，除油箱外，产品的其它制造过程均在全密闭的无尘、恒温恒湿车间进行。

ABB Chongqing Transformer Co. Ltd. uses high quality materials and excellent technology to produce its transformers. Square and sealed tanks allows for easy installation without the need for un-tanking at site, which protects the transformer from exposure to the atmosphere, humidity and pollution.

The transformers are produced in air-conditioned workshops - dust free, constant temperature and humidity, except for tank making, to ensure that they can operate for thirty years or more.

并联电抗器
Shunt Reactor

并联电抗器是高电压交流输电线路中补偿系统电容最经济有效的方式，以保证输电线路电压的稳定性。它适用于所有系统电压。

ABB电抗器采用有隙芯式结构，这种最优化设计使损耗、噪音及机械振动值降到最低，从而减少对环境的影响。

The Shunt Reactor is a cost efficient piece of equipment to compensate for the capacitive charging of high voltage AC-lines and cables, thus keeping the voltage in the transmission line stable. It is applicable for all voltage systems

The ABB reactor is based on the gapped core type concept. This concept has a low environmental impact in terms of losses, sound and vibrations.

高压直流换流变压器
HVDC converter transformer

高压直流输电技术是ABB在全球首先开发的一种高效、经济、环保的大容量、长距离、低损耗的输电技术。作为高压直流输电系统中重要的组成部分，高压直流换流变压器不仅能在不同电压系统中传递电能，还可以实现直流与交流系统的安全衔接。

ABB pioneered HVDC technology to transmit bulk of power over long distances with improved efficiency in order to increase economic return and environmental performance. As the heart of HVDC system, the HVDC converter transformer not only enables power transmission between two voltage levels, but also provides galvanic separation between AC and DC systems.

成功业绩 – 运行于各地的产品
Successful references – Products running on site

公司自成立以来，先后参与了众多国家重点电力项目的建设，包括长江三峡水利枢纽工程、西北至华中高压直流联网工程、西北地区750kV变电站、北京奥运会电力建设重点项目北京城北500kV变电站等多项大型输变电工程。

此外，公司的产品还先后出口到新加坡、澳大利亚、印度尼西亚、老挝、越南等国外市场。公司在海外市场的优秀表现，也提升了“中国设计”在电力变压器领域的国际影响力。

Since its establishment, the ABB transformer factory in Chongqing has been involved in many key national development projects, such as Yangtze River Three Gorges Hydro Power Project, Northwest to Central China DC Interconnection project, Northwest 750 kV substations, Beijing Chengbei Substation (one of the key projects for Beijing Olympic Games) just to name a few.

Furthermore, our products have been successfully exported to overseas markets, such as Singapore, Australia, Indonesia, Laos, Vietnam, etc. The excellent performance in overseas markets enhances the international influence of “Designed in China” in power transformer industry.

国内项目
Domestic reference

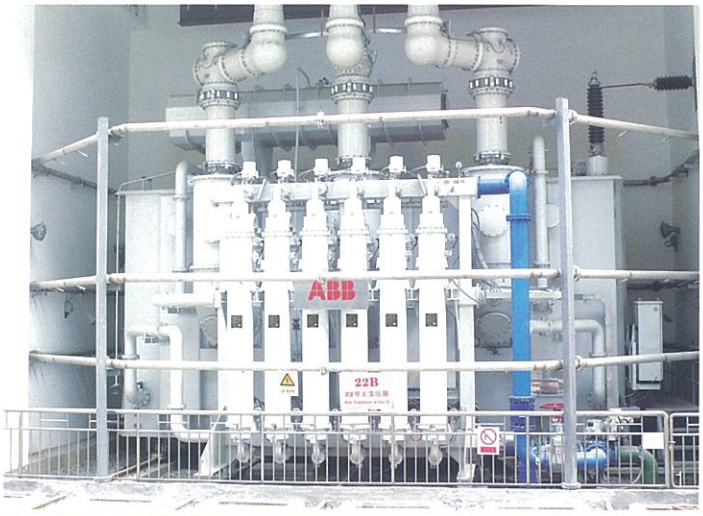
- 中国长江三峡工程右岸电站工程
- 西北至华中电网直流联网工程德阳500kV换流站项目
- 宁夏黄河750kV变电站扩建工程
- 新疆哈密750kV变电站二期扩建工程
- 北京奥运会工程城北500kV变电站
- 广东电网木棉500kV变电站项目
- 上海外高桥1000MW机组电厂
- 山东黄岛电厂800MVA变压器项目
- 甘肃张掖330kV变电站项目
- 中国电力工程顾问集团通榆风电500kV变电站

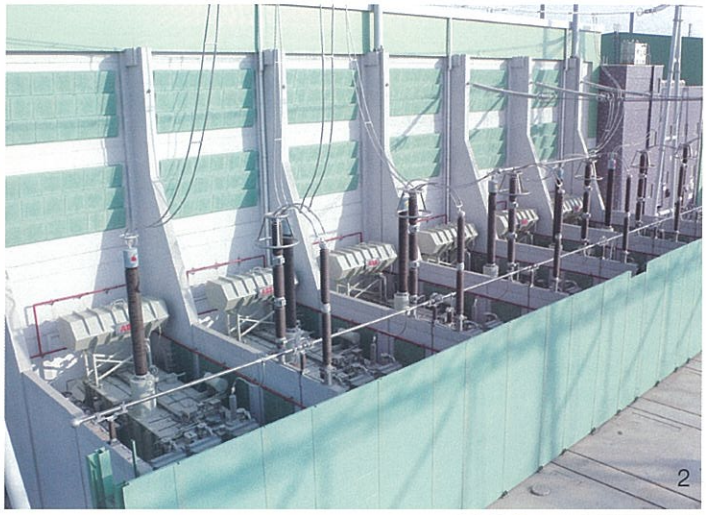
- Yangtze River Three Gorges hydro power right bank substation
- Deyang 500kV converter substation for Northwest-Central China Power Grid DC interconnection project
- Ningxia Huanghe 750kV substation expansion project
- Xinjiang Hami 750kV substation, the 2 phase project
- Beijing Chengbei 500kV substation (one of the key projects for 2008 Beijing Olympic Games)
- Guangdong Power Grid 500kV Mumian substation
- Shanghai Waigaoqiao 1000MW generator power plant
- Shandong Huangdao power plant 800MVA transformer project
- Gansu Zhangye 330kV substation
- China Power Engineering Consulting Group Tongyu wind power 500 kV substation

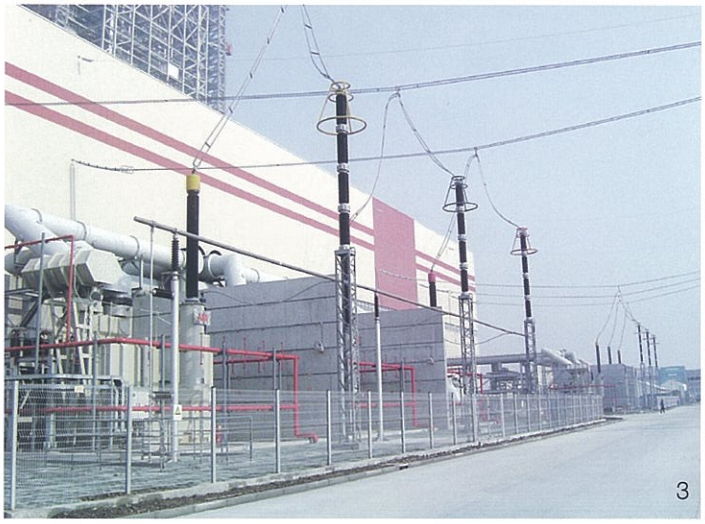
海外项目
Overseas reference

- 新加坡国家电网400kV变压器项目
- 新加坡国家电网230kV三相一体并联电抗器项目
- 菲律宾国家电网 Compostela 230kV变电站
- 澳大利亚Capital风电330kV变电站
- 澳大利亚Brunswick 220kV电站项目
- 越南永昂热电厂245kV变压器
- 印度尼西亚冈都尔500kV变电站
- 泰国国家电网大曼谷区230kV二期工程

- Singapore Power Grid 400kV substation transformer
- Singapore Power Grid Kallang Basin substation 230kV 3-phase Shunt Reactor
- Philippines State Grid Corporation Compostela 230kV substation
- Australia Capital wind farm 330kV substation
- Australia Brunswick Terminal 220kV station
- Vietnam Vung Ang power plant 245kV transformer
- Indonesia Gandul 500kV substation
- Thailand EGAT 230kV Great Bangkok Area phase 2 project







1)三峡右岸电站　2)上海外高桥电厂　3)德阳高压直流换流站　4)北京城北变电站
1)Three Gorges right bank substation　2)Shanghai Waigaoqiao power plant　3)Deyang HVDC converter substation　4)Beijing Chengbei substation

联系我们
Contact us

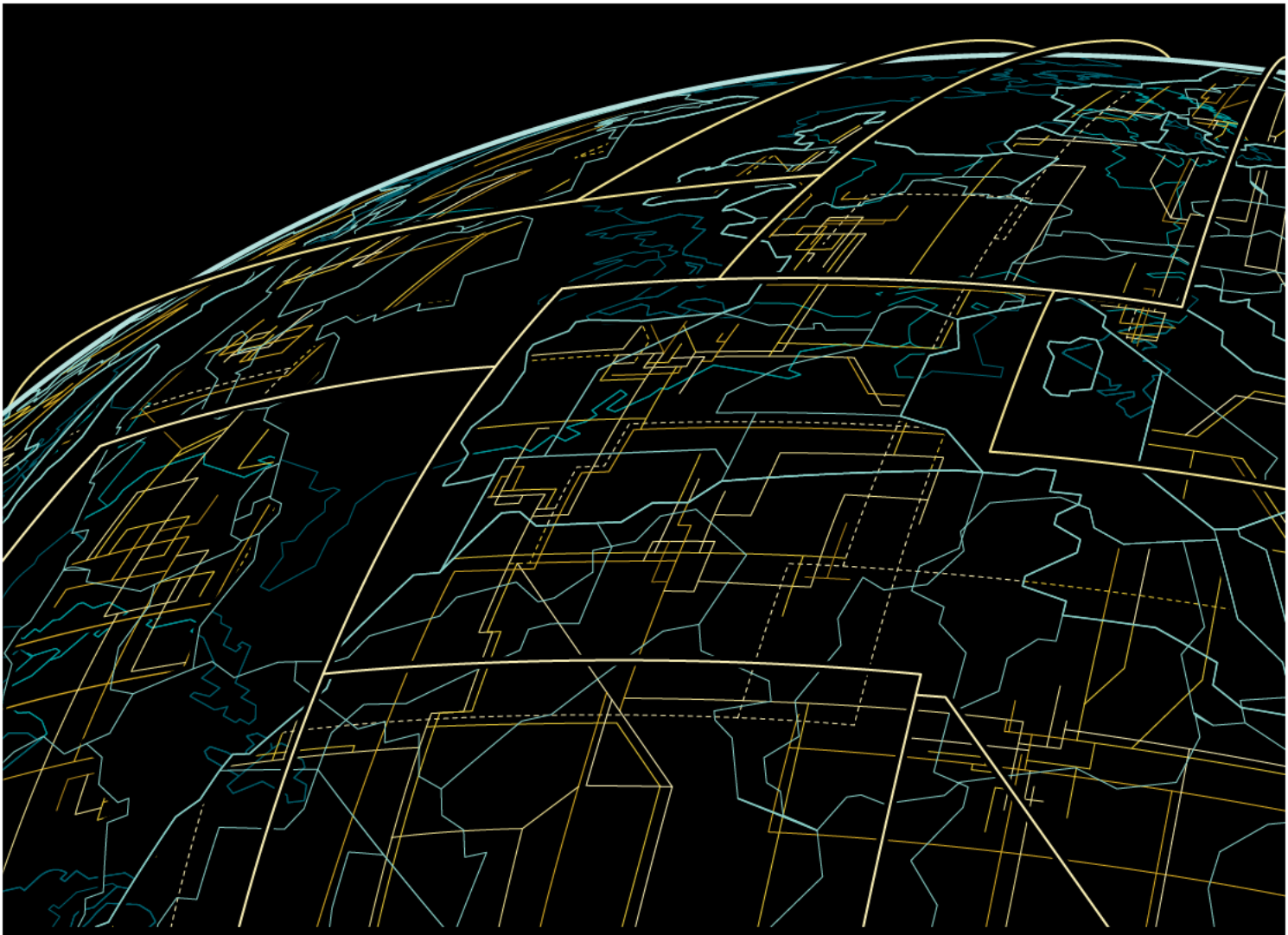
重庆ABB变压器有限公司
地址：重庆中梁山华岩南村1号
电话：+86 23 65093688
传真：+86 23 65093310
邮编：400052
www.abb.com/transformers

ABB Chongqing Transformer Co., Ltd.
Add: No. 1, Huayannancun,
Zhongliangshan, Chongqing
Email: cnctc@cn.abb.com
Tel: +86 23 6509 3688
Fax: +86 23 6509 3310
Postcode: 400052
www.abb.com/transformers

Note:
We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

CNPPTR/CNCTC/1ZKC 000001

用电力与效率
创造美好世界™



Power transformers

Power transformers
Built for reliability and efficiency

Power and productivity
for a better world™

Power transformers
A safe partner

Safe operation
Safe delivery
Safe investment

A safe choice in transforming electric energy
Reliability throughout the transformer life cycle

A power transformer is a technology investment that needs to be secured for decades. The reliability and efficiency of the transformer has a major impact on the total cost of transmission over a long period of time. Ultimately, it affects the quality of life for the people who depend on a continuous power supply – which makes ABB's high-quality power transformers a safe investment, ensuring our clients benefit from profitable and long-term relations with their customers.

Safe operation

Grid stability depends greatly on the availability of power transformers, and every operational standstill is costly due to repair costs and loss of revenues. That is why in every part of the supply chain – from design to delivery – ABB never compromises on quality.

ABB's platform for designing and manufacturing a complete portfolio of power transformers is unique to the industry. It allows us to maintain control of the quality of all relevant parts – including key components such as bushings, tap changers, insulation materials and active parts. We also ensure that the same rigorous demands apply to our first-class certified suppliers.

Before delivery, every ABB power transformer is tested according to international standards. Through continuously improved design and manufacturing procedures, we have succeeded in reducing test failures by 50 percent between 2000–2010. As a result, our short circuit reliability is now more than twice as high as the market average.

Safe delivery

Customers can rely on ABB's consistent, high quality products. This is the result of our TrafoStar™ platform, a common design and manufacturing platform that is today implemented in all 13 of our power transformer plants worldwide. ABB has delivered more than 14,500 power transformers (over 17,000,000 MVA) based on TrafoStar, including over twenty 800 kV UHVDC units and over five hundred 735–765 kV AC units to all major global markets.

All of our plants use identical routines so that we operate as one large virtual factory and in turn provide consistent, location-independent quality of delivery. In fact, we are able to operate multiple parallel manufacturing processes in different countries, or even continents, in order to ensure timely delivery according to strict deadlines.

Our success is the result of continuous feedback of information throughout our organization. Since every power transformer delivery is unique, we re-use all experience by feeding information back into our vast and growing library of best practices. This helps guarantee the successful transfer of skills across national borders as well as between generations of our people.

Safe investment

The purchase price of a power transformer represents only a fraction of the total cost of ownership of the asset. Operating costs such as losses, excessive repairs and low availability combine to dramatically change the picture.

Even a short power transformer outage may cost millions of dollars in lost revenues. The risk of failure is therefore, an inevitable cost to be considered when evaluating the total cost of ownership.

Modernizing their power transformer fleet is a sound investment for power companies. ABB's power transformers have close to 100 percent efficiency, which ensures a short payback time on the investment. With a global average of 10 percent losses in today's T&D systems, the lifetime cost for losses alone may exceed the purchase price of a new ABB transformer by a factor of two – based on estimates of future energy prices.

Proven transformer technology and long-term, global field experience

Power transformers are key components in power networks. Their availability and longevity have a major impact on grid reliability and profitability. ABB does not compromise on quality. We therefore ensure that every one of our 14,500 delivered units has undergone rigorous full-acceptance testing. This has made us the undisputed world leader in the power transformer industry.

50 percent fewer test faults in 10 years

Fewer test failures generally means fewer field failures. An in-depth understanding of the root cause of each failure is necessary to ensure high reliability in power transformers. Unfortunately, in today's fiercely competitive global market, many suppliers refrain from carrying out the necessary tests or from adequately presenting their results.

At ABB, correct and transparent failure reporting is an affair of the heart. We invest vast resources into rigorous full-acceptance testing. Continuously improved design and manufacturing methods have helped us to reduce test failures by 50 percent between 2000–2010. We track and analyze all reported field failure incidents to ensure consistently high transformer availability.

Twice as high short circuit reliability as the market average

ABB conducts all the necessary electrical and thermal tests according to international test standards. Short circuit tests are particularly expensive to carry out, but they are vital to the reliability of the transformer. That is why we conduct more short circuit tests than any other supplier. The results are clearly demonstrated by KEMA statistics, proving our short circuit reliability to be more than twice as high as the market average.

Complete power transformer portfolio

ABB offers a complete range of power transformers and related components and parts. We have delivered more than 14,500 power transformers (over 17,000,000 MVA), including over twenty 800 kV UHVDC and over five hundred 735–765 kV AC units, to all major global markets. Our entire range is the result of our own research, development and manufacturing, which makes us unique in the industry. This has given us extensive experience in every relevant part of power transformer technology. Customers worldwide can securely rely on the quality and reliability of our products.

Our product range includes:

- Generator step-up and intertie power transformers
- HVDC and HVDC Light transformers
- Phase shifting transformers
- Shunt reactors and variable shunt reactors (VSR)
- Industrial transformers
- FACTS transformers
- Railway trackfeeder transformers
- Collector transformers for wind and solar plants
- Mobile transformers
- Polytransformers and multi-voltage generator step-up transformers
- Environmentally safe and silent transformers

Most of ABB's power transformers are available with core- or shell-type technology. Contact ABB or refer to ABB product notes for detailed descriptions of our range.

Consistent quality of vital components

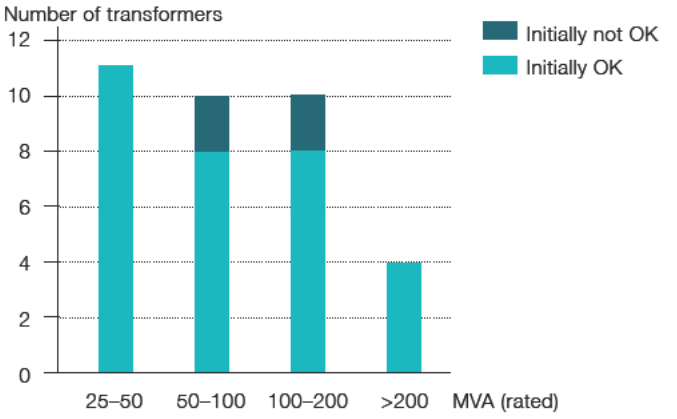
A power transformer must withstand tremendous loads during a lifetime of up to 40 years. This requires quality down to the smallest detail and carefully selected components. Global reliability surveys indicate that reliability is heavily dependent on excellent quality bushings, tap changers and the active part. Thanks to in-house production, ABB is able to consistently control and guarantee the quality of these key components. For those materials that ABB does not produce, it maintains supply agreements with first-class certified suppliers to ensure the continuous supply of high-quality materials – even during periods of raw material shortage.

Undisputed global leader

ABB is the world's largest power transformer manufacturer with 1,000+ units delivered annually from 13 factories worldwide. ABB has more than 4,500 employees and works with customers and suppliers in more than 100 countries. We have the capacity to rapidly deliver customized power transformers, regardless of specification or international standard. Our global service support network delivers truly professional, local, 24/7 support to almost every corner of the earth.

A KEMA* report and ABB statistics indicate that ABB's short circuit reliability is more than twice as high as the market average.

TrafoStar rated 25 MVA or higher, short circuit tested 1996–2011

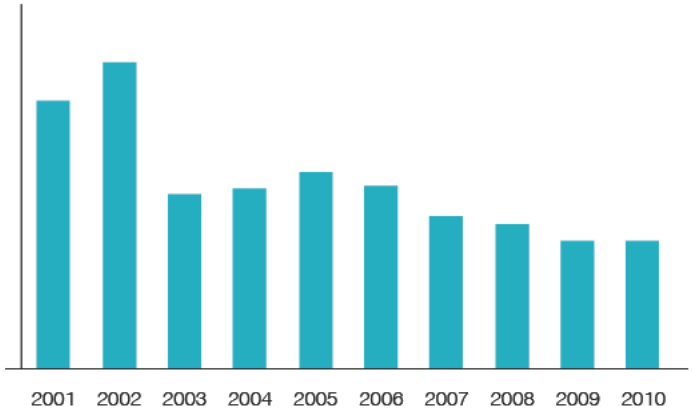


31 out of 35 tested units ≥ 25 MVA were passed between 1996 and 2011, corresponding to 11% test failures.

Transformers rated 25 MVA or higher, tested by KEMA 1996–2009

Total test failures 28%.

Test failures



The total number of test failures on ABB's 60+ MVA units was reduced by 50% between 2001 and 2010.

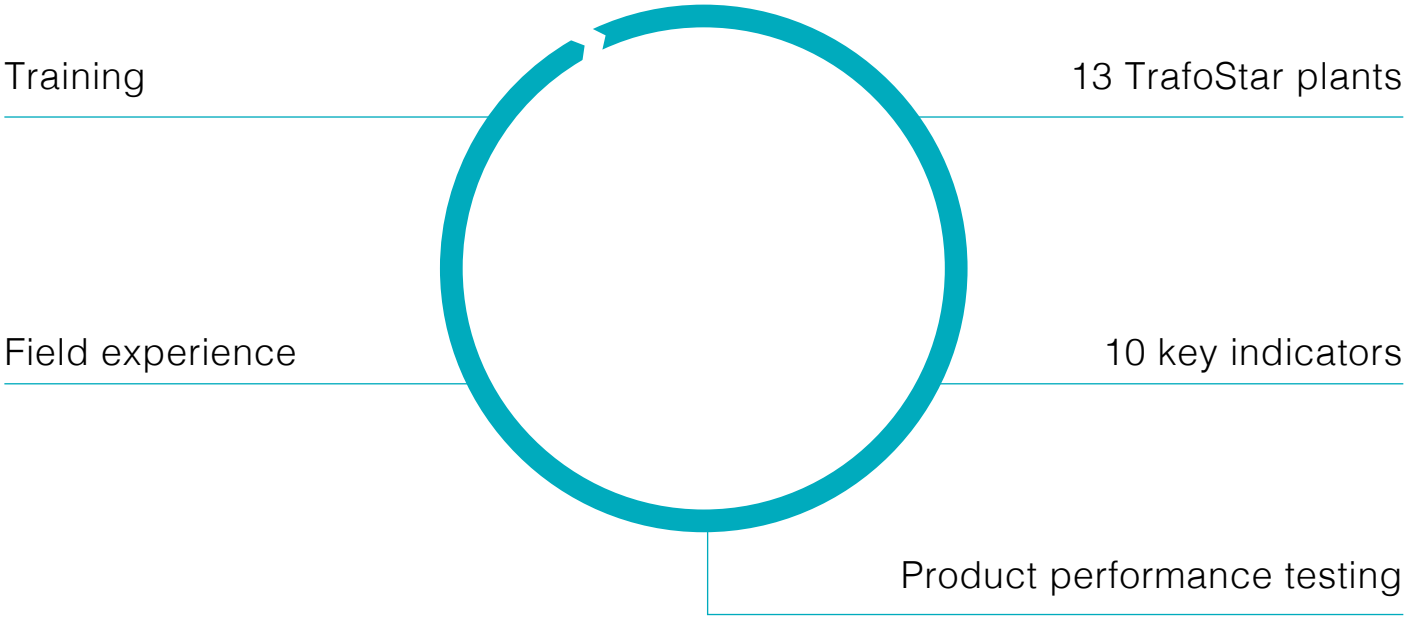
* R.P.P. Smeets, L.H. te Paske. Fourteen Years of Test Experience with Short-Circuit Withstand Capability of Large Power Transformers Travek VI th Int. Sci. and Techn. Conf. on Large Power Transf. and Diagn. Syst., Moscow, 2010

Safe operation
– First class quality
– Highest availability
– Complete technology
– First class suppliers
– 13 factories

VALUE
ABB quality and reliability is verified by testing to be the highest in the market.

On-time delivery of high quality power transformers
TrafoStar Platform

TrafoStar is a global process including more than 60,000 measurements per year in the group.



The global feedback process in ABB's engineer-to-order process.

Delivering a power transformer takes time and planning. There is a chain of events on which the project success depends. ABB's strong delivery performance builds on its common TrafoStar platform, which provides rigorous control throughout the design, manufacturing, testing, transport and delivery stages. Our reliable manufacturing and delivery processes mean efficiency in your business.

Global design standards speed up development

Consistently designing high-quality power transformers requires knowledge and experience on a worldwide basis. With our global design system including common design rules, processes and IT systems, we have built up a global knowledge base. This allows us to design every power transformer according to the same high standards regardless of location. The transfer of knowledge between countries, continents and generations is secured by a learning organization that continuously feeds back experience to a growing library of best practices. Knowledge transfer is further strengthened through our global Knowledge Communication Center in Germany.

One virtual factory – 13 manufacturing locations

For decades, ABB has refined a common, industry-unique manufacturing platform that is now implemented in all of our 13 manufacturing facilities around the globe. Common manufacturing methods, quality standards and test standards allow us to manufacture 1,000+ units annually with the same high quality in all of our plants worldwide. Our harmonized manufacturing processes also enable us to operate several plants in parallel to meet the strictest contractual delivery deadlines.

More than 60,000 process measurements every year

Every year, we conduct more than 60,000 process parameter measurements to collect data to improve our global feedback process. All design and production improvements are implemented in a structured release process of IT program, design instructions and manufacturing standards to further increase customer value. These improvements translate into increased value for ABB's customers.






Delivering a power transformer takes time and planning. ABB's global common TrafoStar platform provides rigorous control throughout the design, manufacturing, testing, transport and delivery stages.

Our improvement processes measured yearly include:

- On-time delivery
- Test and field failures
- Inventory
- Cost of poor quality
- Total throughput time
- Manufacturing throughput time
- Productivity
- Operational health and safety
- Supplier quality

Secure transportation

Moving an object the size and weight of a power transformer requires planning, know-how and a global network of contacts. At the time of transportation, up to 90 percent of the cost of the transformer has already been expended. Hence there is a significant risk for several parties involved, and the demands for secure and reliable transportation are stringent. ABB has extensive experience in delivering power transformers by rail, road, ship and even air. Transport security is ensured through robust transformer design and reliable logistics partners, selected by a global internal logistics organization.

On-site installation and startup support

No customer delivery is completed until the transformer has been successfully energized. ABB installation engineers are therefore always on site to supervise installation and startup. On arrival, they will prepare the transformer by carefully reassembling all parts dismantled for transit, refill it with oil and conduct all necessary on-site tests to ensure long and trouble-free service. As far as possible, the engineers assigned will have local language skills.

Safe delivery
- Common platform
- Global design standards
- 60,000+ measurements
- Installation support
- Secure transport

VALUE
The global TrafoStar platform ensures the highest quality from design to installation.

Efficient operation and reliable local support

The purchase price is not the only consideration when estimating the total cost of ownership for a power transformer. Risk of failure, efficiency factors, support and environmental concerns are other important factors. Adding them all up, ABB's value proposition will appear highly favorable.

Lower risk of failure with proven technology

Transformers are key components in any electric power system. Operational outages can have many negative consequences such as lost revenues, repair costs, dissatisfied customers etc. For example, an outage of a three-phase generator step-up transformer of 500 MVA may cost 3 million euros* per day in lost revenues. Securing transformer availability should therefore be considered an inevitable expense to ensure long-term continuous operation.

The costs can be estimated by summing up a large number of operational risk factors. What if the transformer has a weak short circuit design? Will it withstand the startup load after a blackout? Due to their proven robust design and reliability, ABB power transformers dramatically reduce these and other operational risks.

These are some of the factors that affect the total cost of ownership, aside from the purchase price:

- Capitalized losses
- Short circuit strength
- On-time delivery
- Test failure records
- Transport security
- Low maintenance cost
- Environmentally safe design

Efficiency increase through modernization – a safe investment

Total loss in today's Transmission and Distribution systems is about 10 percent on average. Lifetime capitalized losses alone amount to approximately twice the cost of a modern ABB power transformer, based on estimates of future energy prices. The figures speak for themselves: investing in energy efficiency pays off. In fact, new high-performance power transformer technology is one of the safest investments imaginable – particularly as demand for power supply and energy prices are likely to continue to increase.

Pushing 100 percent efficiency

Efficiency factors of up to 99.85 percent are achievable today. These levels are mainly determined by the loss capitalization factors applied by the customer and ABB's design skills. Correct loss capitalization factors, together with high-quality core steel grades, core designs, winding conductors and magnetic shielding methods, combine to make ABB's power transformers among the most efficient in the market.

*Calculation based on a load of 400 MW, 170 operating hours per week and a power price of 0.05 euro/kWh.

Life cycle cost

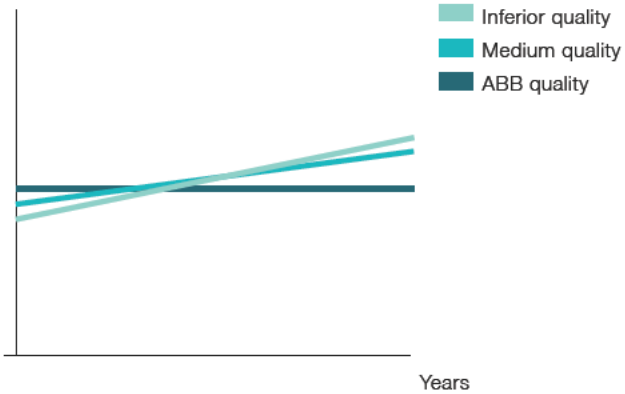
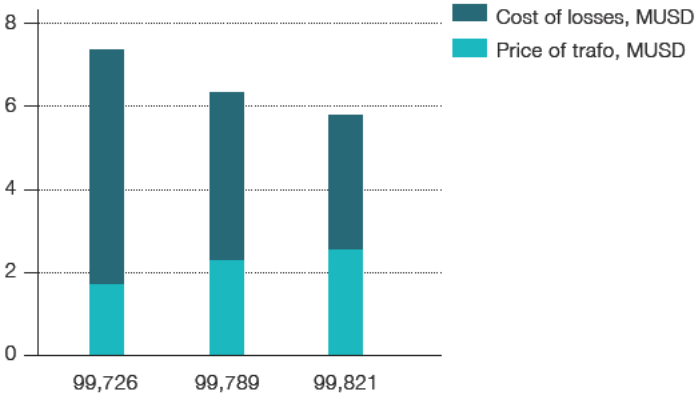


ABB life cycle cost is lower when also considering costs for repairs and loss of revenues due to potential breakdowns.

Total ownership cost, MUSD



Relation between total ownership costs, price and cost of losses (15,000 EUR/kW) as a function of efficiency.

ABB Power Transformers – Manufacturing facilities

Reduced environmental impact

ABB seeks to minimize its environmental footprint by applying environmental management systems that encourage manufacturing sites, suppliers and subcontractors to adopt strict environmental standards. These standards form the benchmark by which we hold our manufacturing facilities accountable. For example, we have reduced overall volatile organic compounds (VOC) emissions from our manufacturing processes by introducing low-VOC painting processes. Additionally, ABB has developed environmentally friendly products such as ultra-low sound transformers and BIOTEMP®-filled transformers.

Low noise and risk of personal injury

ABB ranks among the world leaders in noise reduction. For example, the total noise level of an ABB three-phase 93 MVA unit can be up to 20 dB lower than a similar standard power transformer. ABB power transformers also minimize the risk of explosion due to their safe design, mainly through the use of leading-edge bushings and well-insulated HV and LV leads. Leakage-free gaskets further improve the safety of our transformers.

Close to customers with local support

ABB is the world's leading provider of professional transformer services. With more than 1,000 service experts located in 25 service centers worldwide, we can offer local support in most major global markets. Backed by 100 years of transformer know-how and ABB corporate research centers, we are able to provide highly professional support to ensure maximum power transformer availability and system efficiency. We offer original design and OEM spare parts for more than 30 brands.

Efficiency through 24/7 support

ABB provides customers with a 24/7 support service, an offering which few others can rival in terms of standards. Our global support organization works across borders to solve even advanced customer problems in a short time. Our common design and manufacturing platform grants every support team access to the same support facilities, backed by a truly global organization. Our advanced logistics processes make it possible to transport standardized components within 24 hours, even across continents.

Ensuring local needs with global knowledge

	Born healthy	Live healthy	New lease of life
Needs	Sa ety Environmentally conscious Asset at per ormance level On-time delivery Smooth handover	rouble- ree operation Maximize asset utilization Low Li e Cycle Cost (LCC) Optimize investment planning	Reduce outage Extend asset li e Get more out o aged assets Optimize capital expenditure
ABB Solutions	Asset at per ormance level Smooth handover ransportation/hauling	Maximize asset utilization Low Li e Cycle Cost (LCC) Optimize investment planning Control and monitoring Condition/risk/li e assessment rans ormer management training	Reduce outage Extend asset li e Optimize capital expenditure Spare parts Preventive maintenance Re urbishment/enhancement Upgrades Remanu acturing/ ra oSite Repair End o li e management

Safe investment
– Low risk
– High efficiency
– Low environmental impact
– Personal safety
– 24/7 local support

VALUE
A modern ABB trafo is a safe investment due to its high efficiency.

ABB – your long-term trusted partner

ABB has a long history of proven capability and reliability. With our global resources in the T&D business, we can ensure continuous improvement and development. Our worldwide presence, size and financial strength make us a partner that can be relied upon time and again.

Quality through experience and cooperation

Every grid is unique and so too is every power transformer. Transformers are specified by customers who know their grids and who rely on the manufacturer to come up with a solution that perfectly suits their needs. This is why we invite our customers to provide their input into the design, manufacturing and installation processes.

Global methodology passed down between generations

After the BBC-ASEA merger in 1988, ABB's power transformer technology was developed through a process in which experience and best practices from a wide range of previously independent transformer manufacturers were selectively combined into an improved, common technology known as TrafoStar.

This concept epitomizes ABB's culture of continuous improvement. Everyone involved in the supply chain works according to the same set of rules. All plants manufacture in accordance with the rules, and follow this up with testing and corrective procedures. This way, our worldwide global industrial system is passed down to the next generation of employees – thus securing our continued knowledge and expertise which places us as world leaders in power transformers.

Pushing the research frontline forward

ABB's power transformer operations are backed by the ABB Group's extensive research and development (R&D), which is financed by three percent of the Group's annual turnover – equivalent to a yearly investment of more than $1 billion. The interaction between our growing practical experience and the support of our corporate R&D is unique in the market, and further demonstrates our commitment to guaranteeing superior product quality and continuous improvement.

We have access to the research results of 6,000 scientists and engineers in R&D. Cooperation with 70 universities adds to the combined knowledge base, in basic as well as applied research. In addition, our manufacturing facilities around the world have their own resources for development and local implementation of global R&D results.

Demand will always be there – and so will ABB

Demand for a secure power supply continues to increase. New economies are booming, and along with it, demand for vast amounts of electrical energy. Meanwhile, there is growing demand for improved energy efficiency and reduced environmental impact. ABB continues to invest in the world's future by developing solutions for the energy challenges of tomorrow.

Power transformers
A safe partner

VALUE
Reducing life cycle costs and energy consumption – generation after generation.


ABB

Contact us

ABB Ltd.
Affolternstrasse, 44
P.O. Box 8131
8050 Zurich, Switzerland

www.abb.com/transformers

Note
We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

Power Transformer specification grapheme meaning

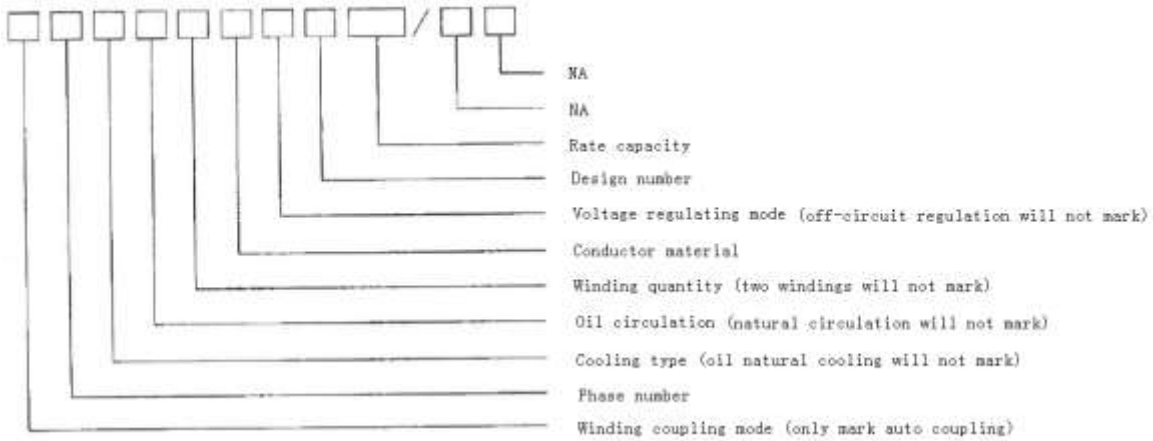


Table 1-1-1

Item	Type	Description	Grapheme
1	Winding coupling mode	Independent	-
		Auto coupling	O
2	Phase	Single phase	D
		Three phase	S
3	Winding insulation medium	Transformer oil	-
		Air (dry)	G
		Gas	Q
		Molding solid	C
4	Cooling equipment type	Natural cooling	-
		Fan cooling	F
		Water cooling	S
5	Oil circulation type	Natural circulation	-
		Forced oil circulation	P
		Forced-directed oil circulation	D
6	Winding quantity	Two windings	-
		Three windings	S
		Two split windings	F
7	Voltage regulation mode	Off-circuit regulation	-
		On-load regulation	Z
8	Conductor material	Copper	-
		Aluminum	L