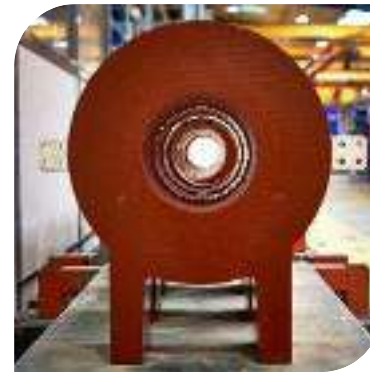




Specific dry-type transformers & reactors



Our history...



Creation of *BC Transformateurs*

Purchase by Schneider Electric group

Creation of BCV Technologies after acquiring *Boige & Vignal*

Purchase by SGB-SMIT group



1947



1995



2000



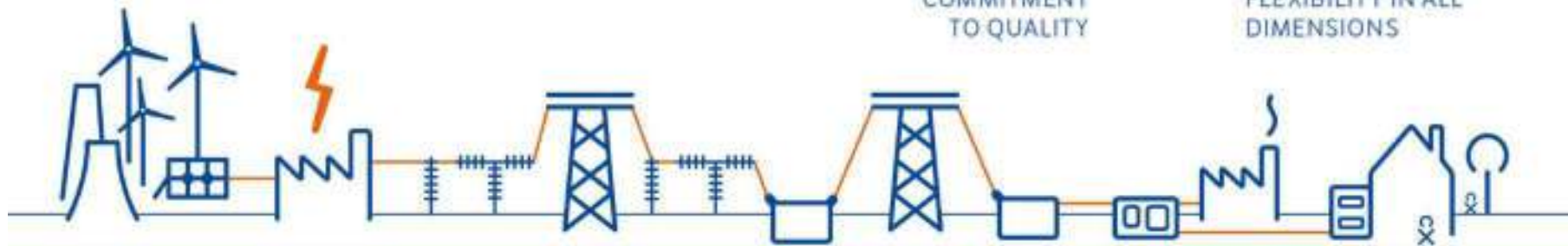
2018



SGB-Smit group at a glance

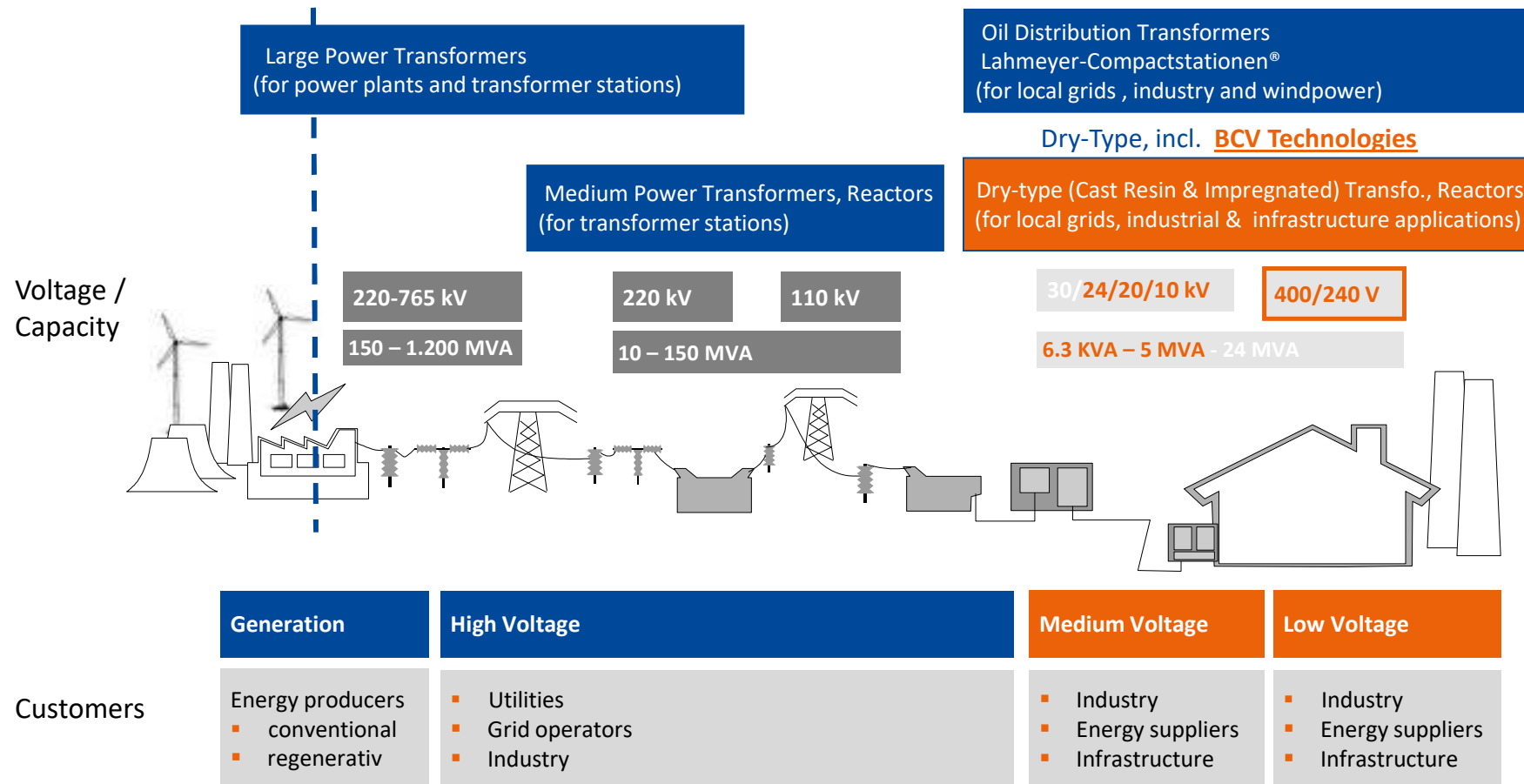


- Among the leading manufacturers of power transformers in the world (6.3 kVA up to 1 200 MVA / 5V up to 765 kV)
- Turnover in **2018**: > 760 Mio. €
- 2019:**
 - > 3 500 employees
 - 9 plants + 3 start-ups
 - Transformer expertise since 1913



Complete range of applications

Generation > transmission > distribution & specific applications



BCV Technologies key figures



2019

- **86** employees
- **1** production site in France (7000m²) with:
Technical (incl. R&D) + Supply Chain
- **In-house** routine tests, types tests...



BCV Technologies



Privileged partner for your
SPECIFIC applications &
BESPOKE solutions

Our quality commitments

Certifications :



ISO 9001 - version 2015:
until July 30th, 2023



ISO 14001 - version 2015:
until July 30th, 2023



ISO 45001 : 2018*
until July 30th, 2023

* Replaces OHSAS 18001:2007

Our global offer

2 dry-type technologies



3 product families

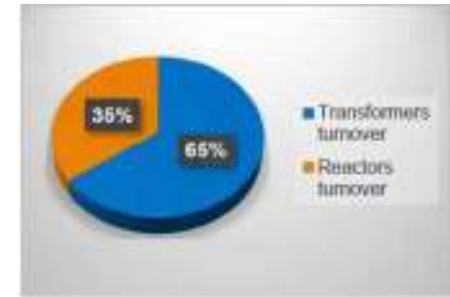
BC Imprego
Impregnated
transformers



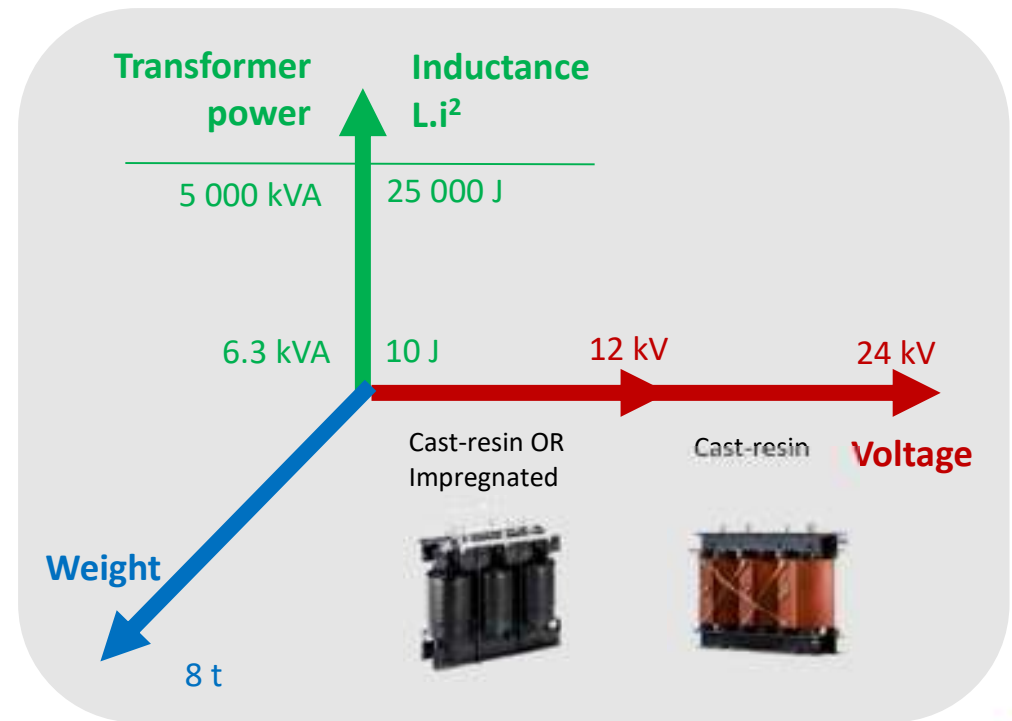
BC Strongo
Cast resin
transformers



BC Indugo
Dry type
reactors



- **Know-how:** 70-year experience
- **Expertise:** engineering, design (R&D)
- **Flexibility** and adaptability
- **Quality** → Optimized OPEX



BC Imprego vs. BC Strongo



BC Imprego | BC Strongo

- Transformers* LV + MV ≤ 5 MVA / 12 kV

- Transformers* LV ≤ 600 kVA
- Transformateurs* MV ≤ 3 MVA / 24 kV



Technology assets

- More flexible, high level adaptation to the customer's application specificities (wider range of power, seismicity, etc.)
- Typically better price
- Safety (BCV special development: a F1 fire-resistant impregnation techno.)
- Insulation class: H
- Heats down faster
- Typically more compact in LV

Impregnated

- 6.3 kVA to 5 MVA
- Until 12 kV
- AN, AF, WF, AFWF
- Enclos.: IP21 to IP65
- 50, 60 Hz
- Copper / Aluminum
- E2, C2, **F1**

Cast resin

- 10 kVA to 3 MVA
- Until 24 kV
- AN, AF, WF, AFWF
- Enclos.: IP21 to IP65
- 50, 60 Hz
- Copper / Aluminum
- E2, C2, F1

Technology assets


- High resistance (particularly suited for harsh environment)
- Reliability even above 12 kV
- Dismountable
- More compact in HV

* Including autotransformers

BC Imprego – A fire-resistant impregnation technology !!



Impregnated transformers with **self-extinguishing ability** (F1-certification)

- To benefit from the assets of impregnation technology, without compromise on safety  **essential for critical applications**

GRUPE CNPP
 Département Feu et Environnement
 Route de la Chapelle Béville
 CD 64 - CS 22265
 F 27550 SAINT MARCEL
 Téléphone 33 (0)2 32 53 64 33
 Télécopie 33 (0)2 32 53 64 68



Expert en prévention et en maîtrise des risques

RAPPORT D'ESSAI N° PN 14 9758
TEST REPORT N° PN 14 9758

Saint Marcel, le 05 Novembre 2014

Demandé par / Requested by : **BCV TECHNOLOGIES**
 21 Allée des Justices
 85 200 FONTENAY-LE-COMTE

Objet / Subject : Essai de comportement au feu d'un transformateur de puissance de type sec de classe F1 selon la norme IEC/CEI 60076-11 : 2004
Class F1 fire behaviour test of a dry type transformer according to IEC/CEI 60076-11 : 2004

Matériel testé / Tested equipment : 1 phase complète d'un transformateur comprenant les bobines HT et BT ainsi que le circuit magnétique
1 complete phase of a transformer comprising the HV and LV coils and the magnetic core

Référence / Reference : 478963-001
 Fabricant / Manufacturer : BCV TECHNOLOGIES
 Numéro de série / Serial number : 318158

DNV·GL

KEMA REPORT OF PERFORMANCE

1425-15

Object : A three-phase dry-type VPI (varnish impregnated technology) transformer
Type : BNC 479704-00 **Serial No.** : 610655/001
 - 5,5/0,41 kV - 500 kVA - Dyn11 - 50 Hz

Client : BCV Technologies, Fontenay le Comte, France
Manufacturer : BCV Technologies, Fontenay le Comte, France¹⁾
Tested by : KEMA Nederland B.V., Arnhem, The Netherlands
Date of tests : 17 September to 5 November 2015
Test specification : The tests have been carried out in accordance with IEC 60076-11 (2004).

KEMA Laboratories - 18 - 1425-15

6.2 Fire behaviour test for F1 class transformer

Result
 The object passed the test.

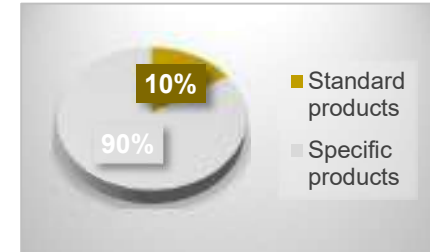
BC Imprego – Sub-family: standard transformers

UNITS IN STOCK (MTS)

➔ Available in **1 or 2 DAYS**

PARTS IN STOCK (MTO)

➔ Available in **1 or 2 WEEKS**



BC Imprego Single-phase Transformer

- Power: 6.3 to 20 kVA
- Voltage ratio: 231/115V, 231/231V, 400/115V or 400/231V



BC Imprego (Medigo) Healthcare single-phase / Three-phase Transformer

- Power: 6.3 to 10 kVA
- Voltage ratio: 230/115-230V (single-phase) or 400/230V (three-phase transformer)

✓ **NF EN 61558-2-15**



BC Imprego Three-phase Autotransformer

- Power: 10 to 400 kVA
- Voltage ratio: 231/400V or 400/231V



BC Imprego Three-phase Transformer

- Power: 8 to 400 kVA
- Voltage ratio: 400/400V or 400/231V



A few ex. of special transformers...



Earthing transformer
(for nuclear power plant)
BC Imprego



MV/LV AF & WF transformer
(for electrochemical process)
BC Imprego



IP65 LV transformer
(for Oil & Gas outdoor application)
BC Strongo

A few ex. of special transformers...



12-pulse transformer with 1 cast resin MV primary winding
+ 2 impregnated LV secondary windings
BC Strongo

24-pulse transformer
BC Imprego

Our dry-type reactors



BC Indugo



Technology assets

- More **flexible**, high level **adaptation** to the customer's application specificities (wider range of power, seismicity, etc.)
- Typically **better price**
- **Safety** (BCV special development: a F1 fire-resistant impregnation techno.)
- **Insulation class: H**
- **Heats down faster**
- **More compact in LV**

Impregnated

- DC or AC
- Air or iron core
- ≤ 12 kV
- AN, AF, WF
- Enclos.: IP21 to IP42*
- E2, C2, **F1**

Cast resin

- DC or AC
- Air or iron core
- ≤ 24 kV
- AN, AF, WF
- Enclos.: IP21 to IP42*
- E2, C2, F1

Technology Assets

- **High resistance** (particularly suited for harsh environment)
- **Reliability even above 12 kV**
- **Dismountable**
- **More compact in HV**

* Outdoor / higher IPxx solutions to be studied on a per-case basis

BC Indugo – Main families

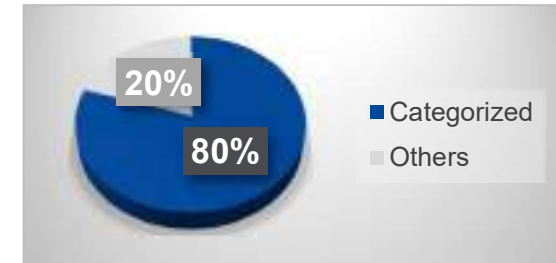
Different specificities for different applications

(Short-circuit) current limiting reactor

Impedances fitted in series on the supply network to limit short-circuit currents, thus reducing protective device requirements (ring main units)

Power factor correction reactor

Compensate capacitive current and correct power factor in order to reduce losses



(Harmonic) filter reactor

Address the harmonics problems created by non-linear load such as AC-DC converter, DC drives, welding m/c etc.

Smoothing reactor

Smooth out the harmonic currents and transient over-currents (ripple) in DC systems (rectifying/switching power supply, etc.)

A few ex. of special reactors...



5-column water-cooled reactor
(for energy conversion)
BC Indugo



Coupling reactor
(for UPS units)
BC Indugo



Short-circuit limiting reactor
(for MV network on ship)
BC Indugo

Some of our enclosures



Enclosure: IP21



Enclosure: IP31



Enclosure: IP54



Enclosure: IP65

A wide range of optional accessories



1 Thermostatic probes



2 PT100 probes



3 Infrared window

10 Fuses (HV)



4 Relay type MSF220K



7 Standard pad



5 MB103 unit



8 Specific pad



6 T935 unit



9 Standard bi-directional rollers



13 Space heater with thermostat (integrated or not)



11 Circuit breaker



12 Lock



A wide range of accessories

A few examples of customization



BC Strongo
With integrated accessory box
and infrared windows



BC Strongo
With integrated protection box
with MV fuses

Main markets & applications



Industry



Marine



Oil & Gas



Datacenter & Secure network



Building & Infrastructure



Healthcare



Contact us :

bcv-technologies@sgb-smit.group - Tel. +33 (0)2 51 53 22 00