First South East European
Regional CIGRÉ Conference
Portoroz, Slovenia, 7—8 June 2016

SEERC

SCB1
The Future Power System

Contribution of Insulated Cables

P.Argaut
SCB1

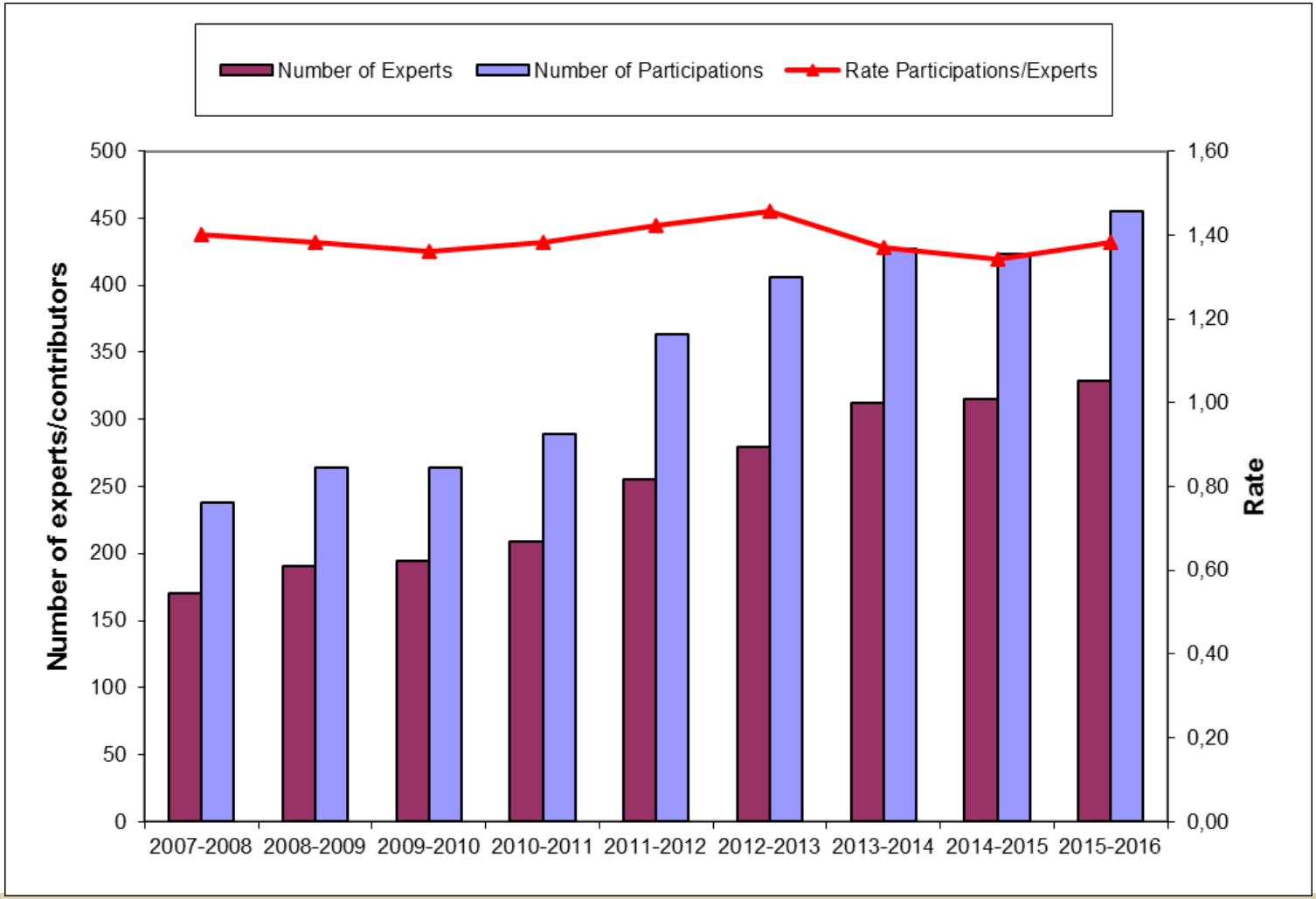
Cables within CIGRE: SC B1 (Insulated Cables)

- Founded in 1927 (89 years old)
- 24 Members and 15 Observer Members
- 329 experts in the Working Bodies (AG&WG: December 2015)
- 456 “seats” in Working Bodies (AG&WG)
- Around 200 publications since 1969

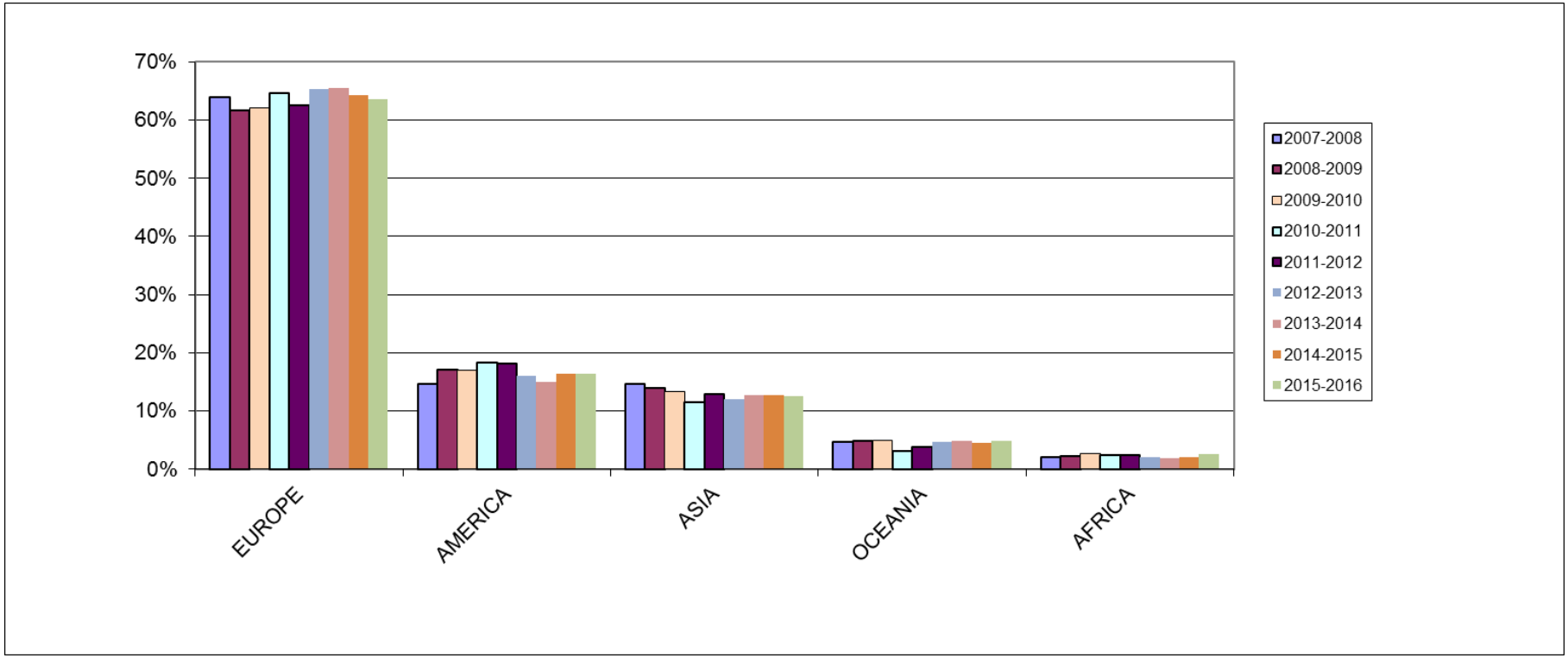
SC B1 Statistics

- Regarding SC B1, 329 Experts in SC and 26 AGs, WGs, TFs, JWG (2015: 315, 2014: 312, 2013: 279, 2012: 255, 2011: 209, 2010: 194, 2009: 191, 2008: 170, 2007: 158, 2006: 132, 2005: 110). 5 (J)WGs has been disbanded.
- Regarded as a 456 (2015: 423, 2014: 427, 2013: 406, 2012: 363, 2011: 289, 2010: 264, 2009: 264, 2008: 238, 2007:228, 2006: 199, 2005: 174) experts' community, Concentration on some experts :
- Mainly from Europe (290), America (75), Asia (57), Oceania (22) & Africa (12)
- Mainly from Manufacturers (170), Utilities (159), Consultants (55), Institutes (52), Universities (20)
- 43 ladies (2015: 38, 2014: 35, 2013: 27, 2012: 20, 2011: 10), 30 Young Experts (2015: 25, 2014: 21, 2013: 15, 2012: 11)
- Conveners sharing well balanced (14 countries for 24 SC B1 Working Bodies)

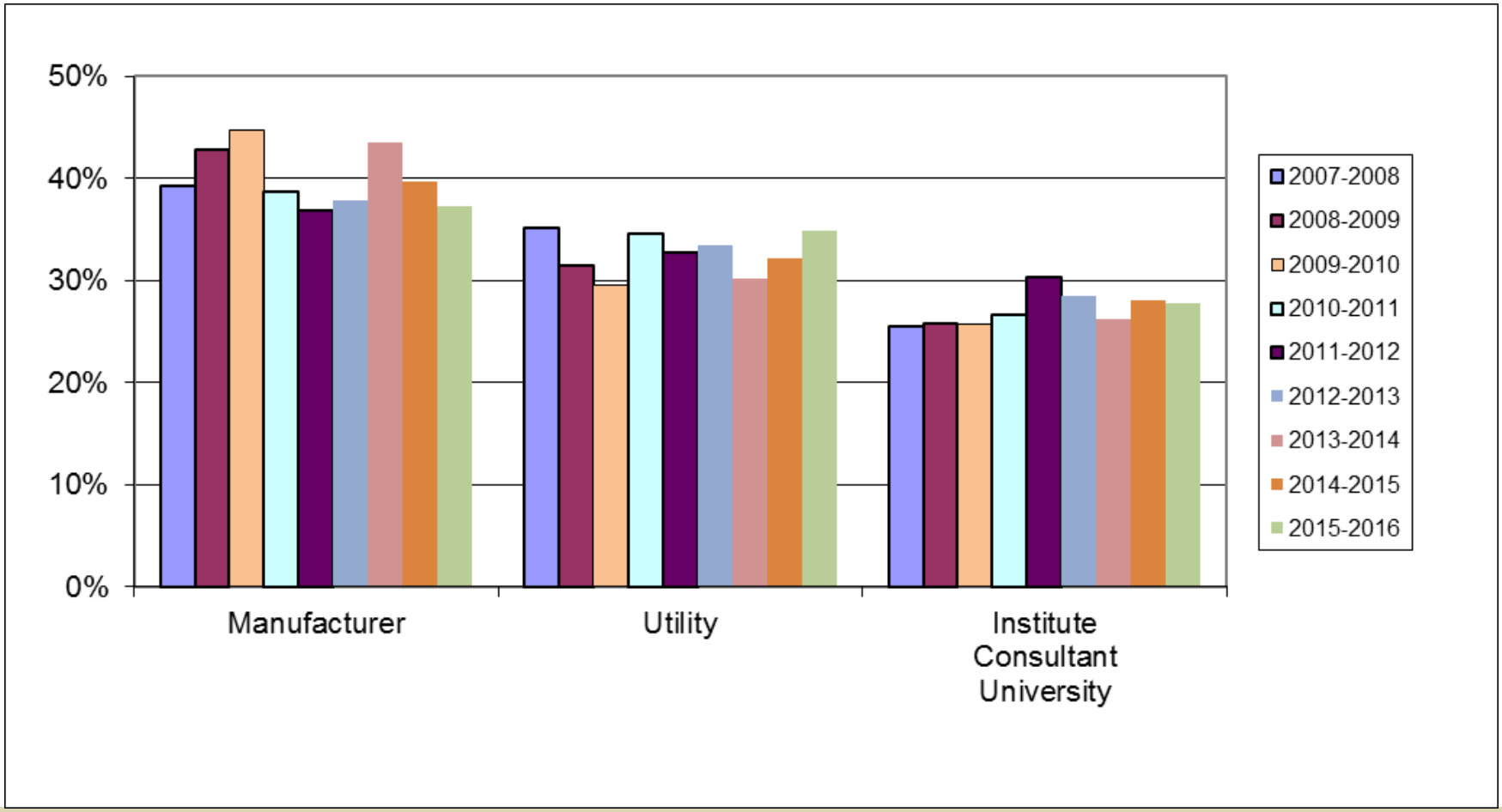
Continuous Growing of the team of experts



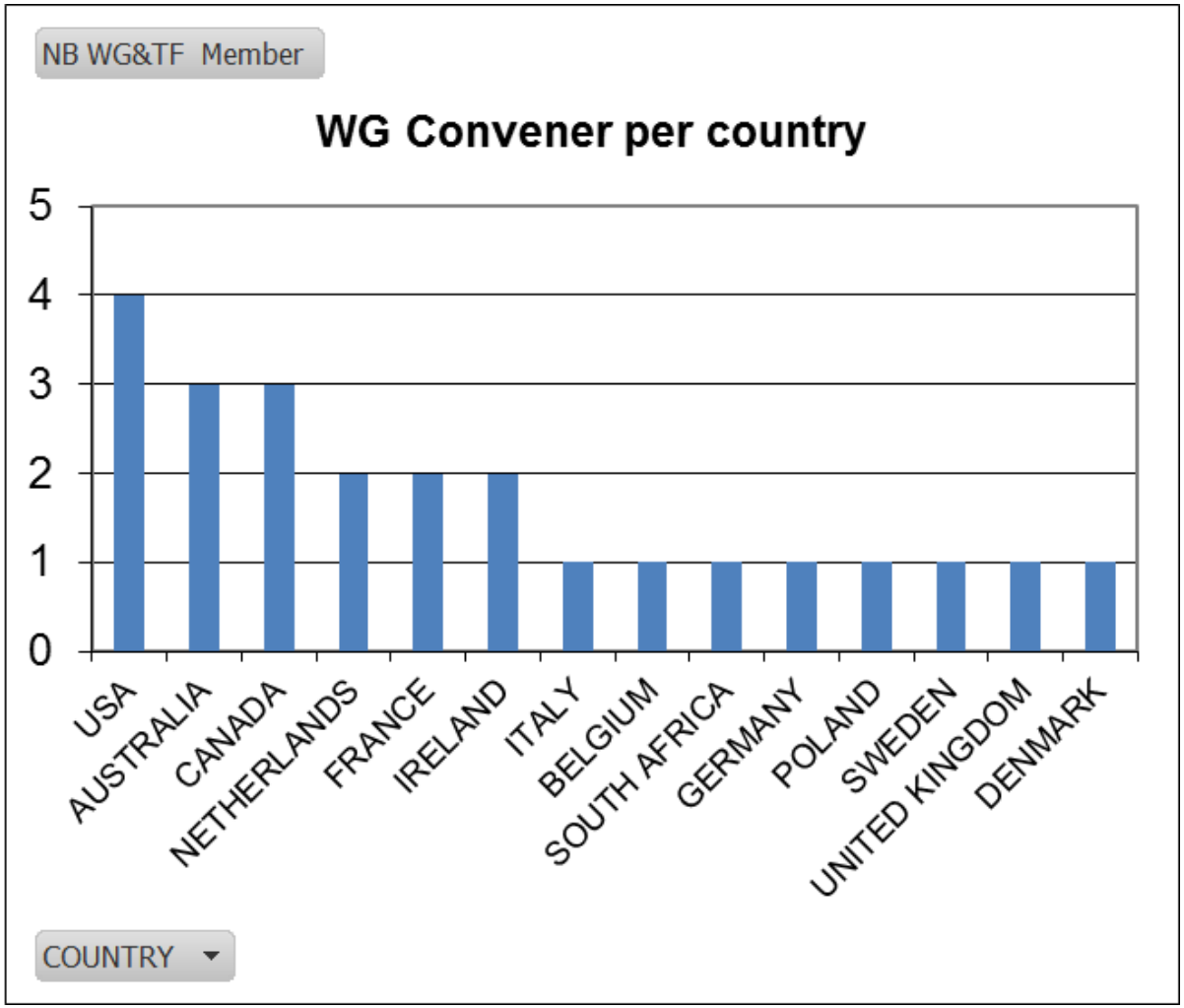
Composition of the Team of Experts



Composition of the Team of Experts



WG Conveners per Country



Recent Publications

WG number	Name of the Publication	Publication date	Electra and Technical Brochure
JWG B1/B3.33	Feasibility of a common, dry type interface for GIS and Power cables of 52 kV and above	Availability on eCigre: January 2015	Electra 279 Technical Brochure **605**
WG B1.11	Upgrading and uprating of existing cable systems	Availability on eCigre: January 2015	Electra 279 Technical Brochure **606**
WG B1.40	Offshore Generation Cable Connection	Availability on eCigre: February 2015	Electra 280 Technical Brochure **610**
WG B1.42	Testing of transition joints between HVDC cables with lapped and extruded insulation up to 500 kV	Availability on eCigre: June 2015	Electra 281 Technical Brochure **622**
WG B1.43	Recommendations for mechanical testing of submarine cables	Availability on eCigre: June 2015	Electra 281 Technical Brochure **623**
WG B1.35	Guide for rating calculations of HV cables	Availability on eCigre: December 2015	Electra 284 Technical Brochure **640**

Publications to come in 2016

WG number	Name of the Publication	Expected Publication date
WG B1.37	Guide for the operation of fluid filled cable systems	Expected Availability on eCigre: March 2016 Done TB 652
WG B1.28	On-site Partial Discharge Assessment of HV and EHV cable systems	Expected Availability on eCigre: June 2016
WG B1.34	Mechanical Forces in Large Cross Section Cable Systems	Expected Availability on eCigre: June 2016
WB B1.36	Life Cycle Assessment and Environmental Impact of Underground Cable Systems	Expected Availability on eCigre: November 2016

SC B1 Decisions

SC Chairman **Pierre Argaut**

Secretary: Alain Gille

AG Strategic : P.Argaut

AG Customer: E.Bergin

AG Prospective: M.Marelli

AG Tutorial and Publication: W.Boone

WORK ITEMS decided in 2014

WG B1.50 SVL and bonding systems (design, testing, operation and monitoring) (Tiebin Zhao/2014-2017)

WG B1.51 Fire issues for cable installed in air (Maioli/2014-2017)

WG B1.52 Fault location on land and submarine links (AC/DC) (Donaghy/2014-2017)

WORK ITEMS decided in 2015

WG B1.54 Behavior of cable systems under large disturbances (earthquake, storm, flood, fire, landslide, climate change) (Orton /2015-2018)

WG B1.55 Recommendations for additional testing for submarine cables from 6 kV to 60 kV (Jeroense/2015-2017)

WG B1.56 Cable ratings verification (De Wild/2015-2017)

WG B1.57 Update of Service Experience of HV Underground and Submarine Cable Systems (Mikkelsen/2015-2018)

CIGRE Session in Paris

- Monday 22nd morning: Welcome to new SCB1 Members
- Monday 22nd afternoon and Tuesday 23rd Study Committee B1 Meeting: Decision on Future Work
- Wednesday 24th : meeting with authors of prepared contributions & review of the slides and time allotment
- Thursday 25th : Group Discussion Meeting: prepared and spontaneous contributions
- Friday 26th:Poster Session of SCB1

WG Decided in 2014

- **WG B1.50** SVL and bonding systems (design, testing, operation and monitoring) (Tiebin Zhao-US /2014-2017)
- **WG B1.51** Fire issues for cable installed in air (Paolo Maioli-Italy/2014-2017)
- **WG B1.52** Fault location on land and submarine links (AC and DC) (Robert Donaghy-Ireland/2014-2017)

WG Decided in 2015

- **WG B1.54** Behavior of Cable Systems under large disturbances (H.Orton-Canada /2015-2018) approved by TC
- **WG B1.55** Recommendations for additional testing for submarine Cables from 6 kV up to 60 kV (M.Jeroense-Sweden/2015-2017)approved by TC
- **WG B1.56** Cable Rating Verification (F.de Wild- The Netherlands/2015-2017)approved by TC
- **WG B1.57** Update of Service Experience of Underground and submarine cable systems (S.Mikkelsen –Denmark/2015-2018) approved by TC

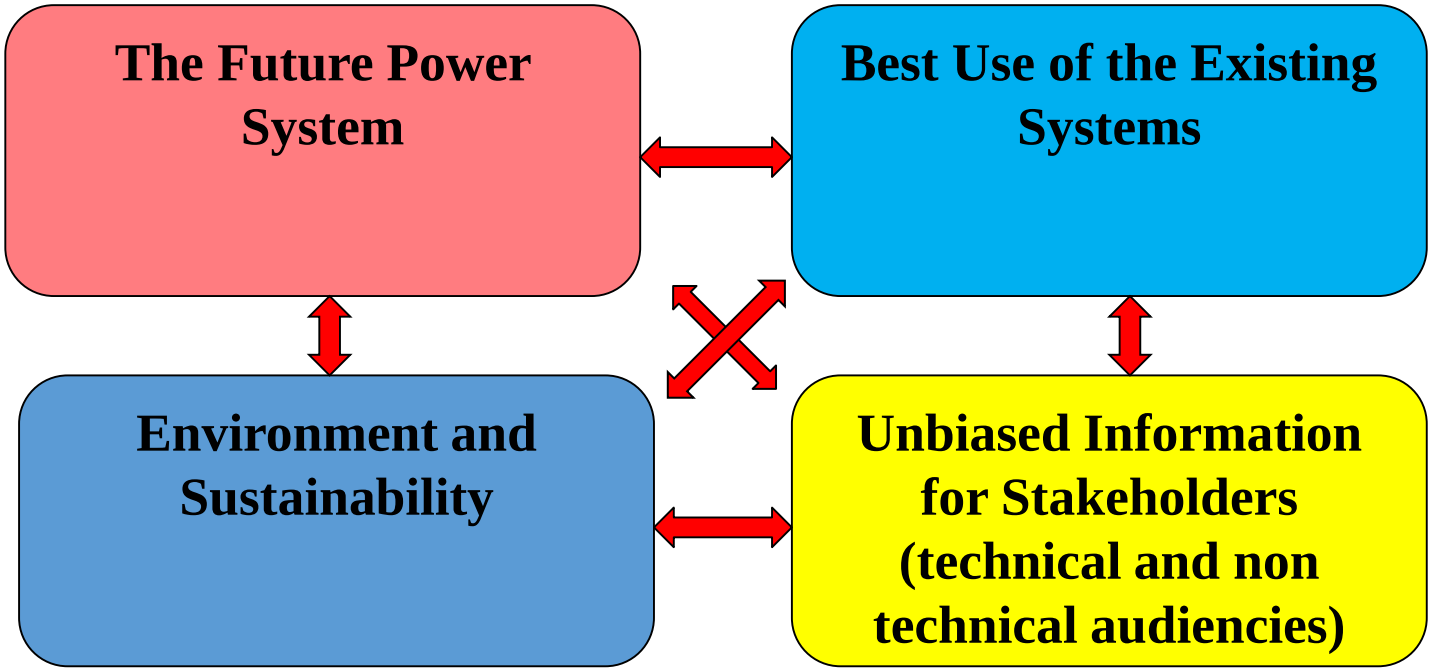
Preparatory Work Decided in 2015 for Decision in August 2016

- **TF B1.58 :** Diagnostic Methods used in MV Cable Network (Slawomir Noske/PL)
- **TF B1.59 :** Possible System Design issues (Kieron Lieburn/ZA)
- **TF B1.60 :** Update of TB 279 on maintenance (Wim Boone/NL)

Vote and first step for nomination of Experts August 2016

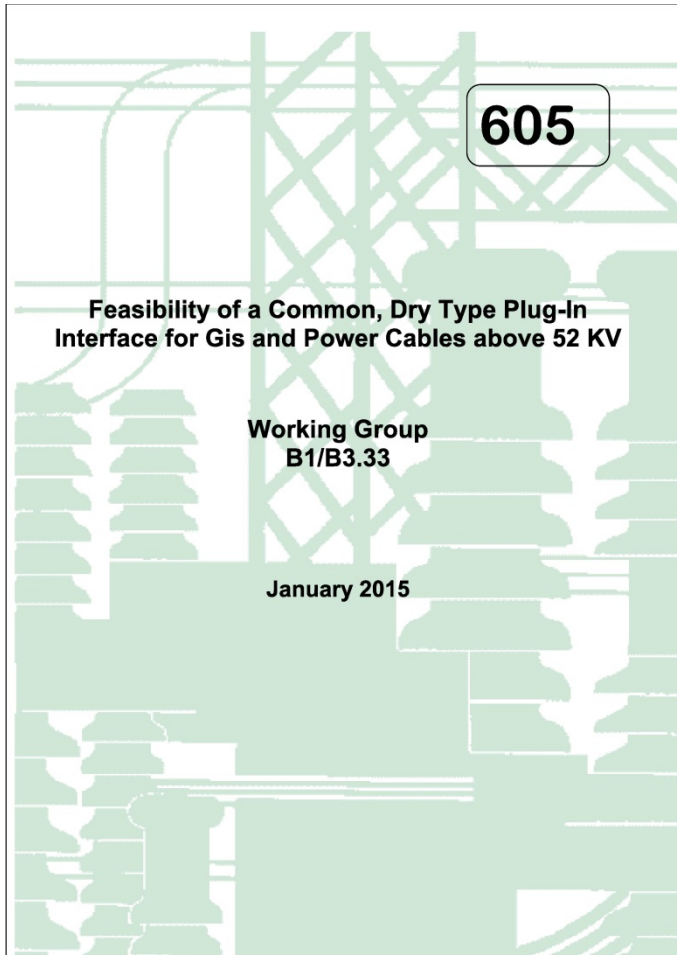
Strategic Plan of SCB1

- The technical strategies of SC B1 for the ten years to come are fully aligned on the four Technical Directions adopted by the Technical Committee of CIGRE



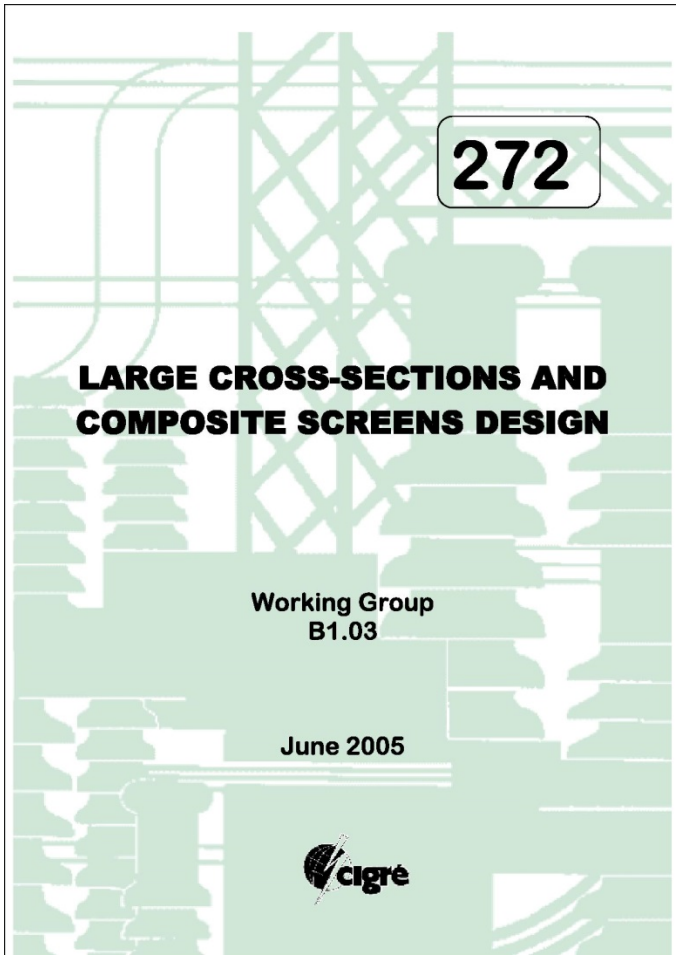
The Network of the Future

The Future Power System:New designs of Cables and Accessories



The Future Power System:

Use of Larger and Larger Cable Conductors



MECHANICAL FORCES IN LARGE CROSS SECTION CABLE SYSTEMS

WG B1.34

Members

J. KAUMANNS, **Convenor** (DE), M. BACCHINI (IT), G. GEHLIN (SE), B. GREGORY (UK), D. JOHNSON (US), T. KURATA (JP), H-P. MAY (DE), F. PEURTON (FR) (repl. by J. SAMUEL), R. REINOSO (ES), J. TARNOWSKI (CA), R. VAN DEN THILLART (NL), M. A. VILHELMSEN (DK), D. WALD (CH)

Invited Expert

C. PYE (IR)

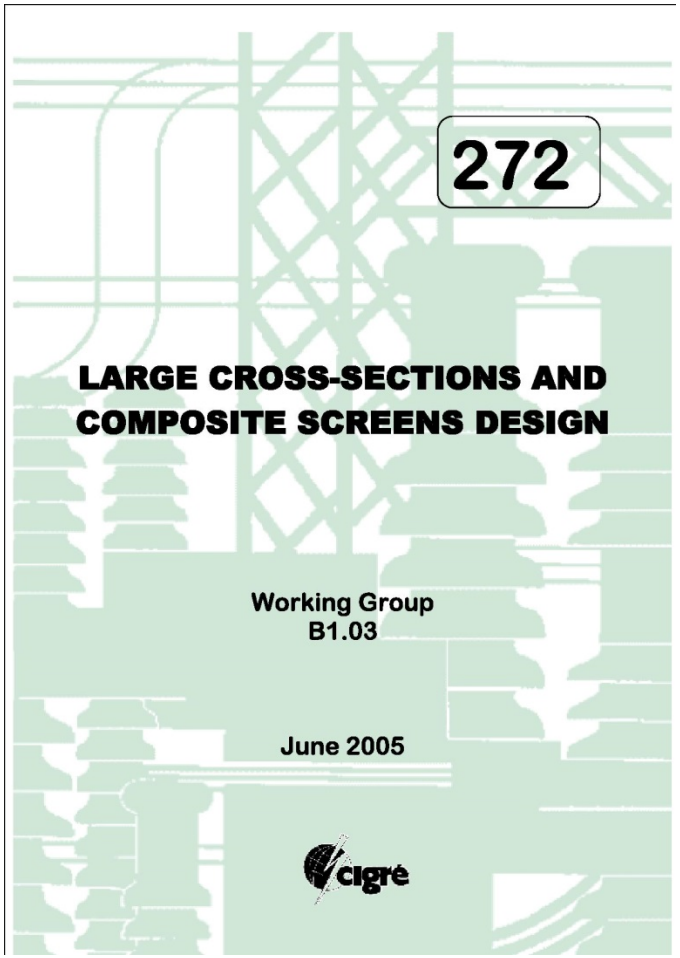
cigré

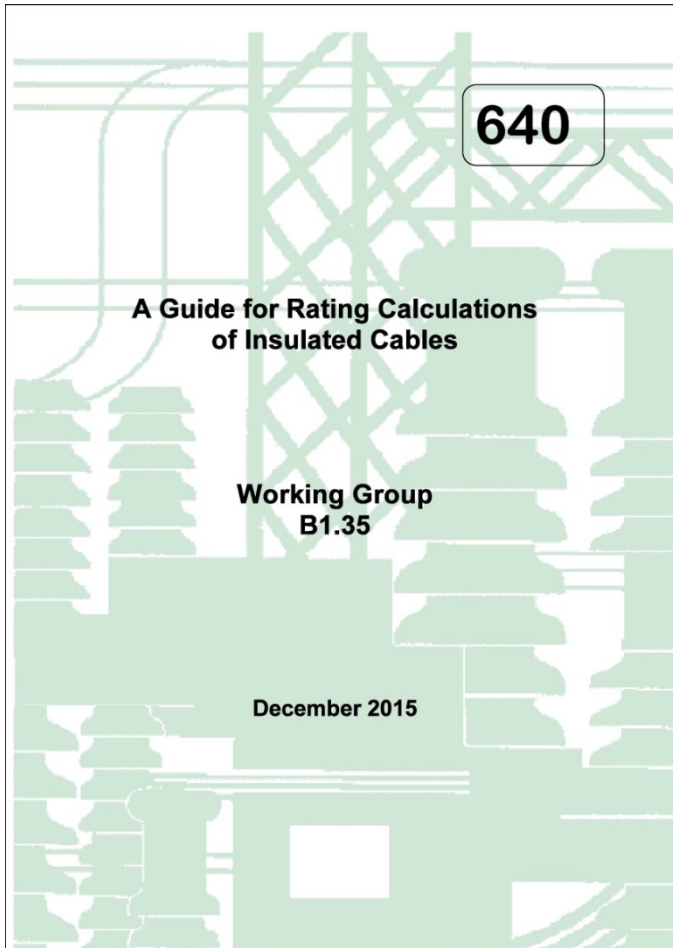
ISBN : (To be completed by CIGRE)

The Future Power System:

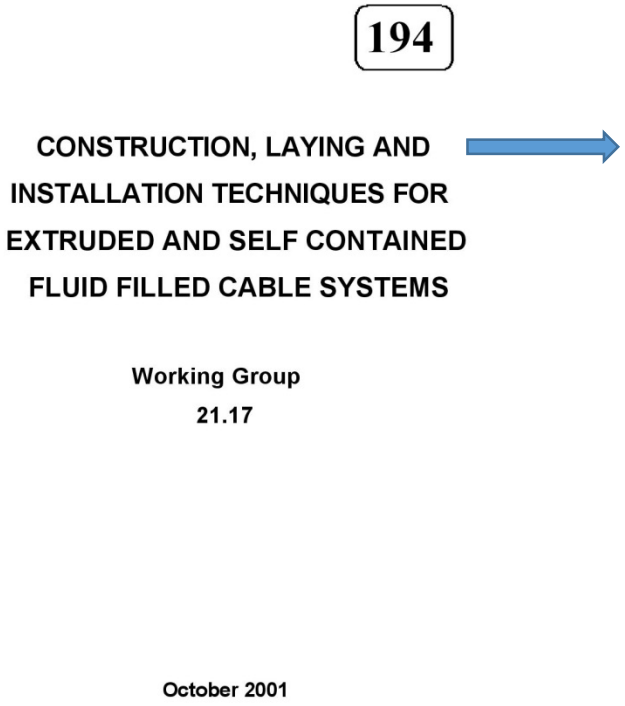
Use of Larger and Larger Cable Conductors

Recently published





The Future Power System:
Use of Larger and Larger Cable Conductors



194

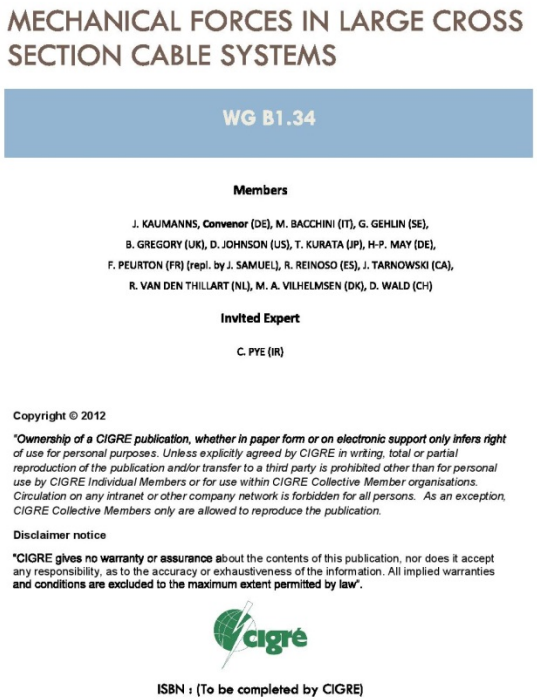
CONSTRUCTION, LAYING AND INSTALLATION TECHNIQUES FOR EXTRUDED AND SELF CONTAINED FLUID FILLED CABLE SYSTEMS

Working Group 21.17

October 2001

To be updated
After B1.34
B1.35 & B1.48

To come soon



MECHANICAL FORCES IN LARGE CROSS SECTION CABLE SYSTEMS

WG B1.34

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Invited Expert

C. PYE (IR)

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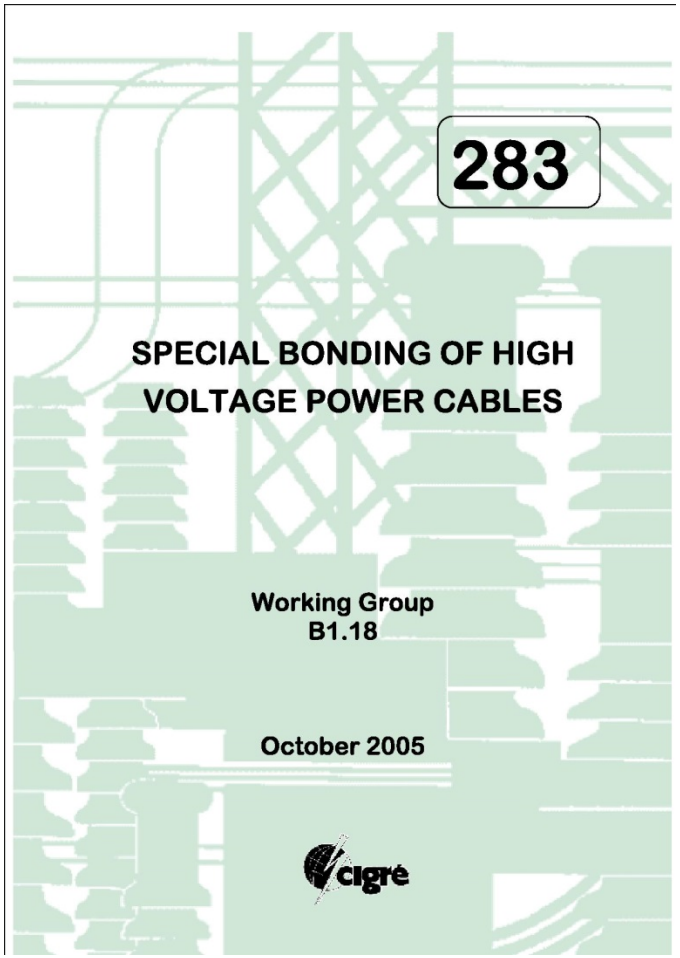
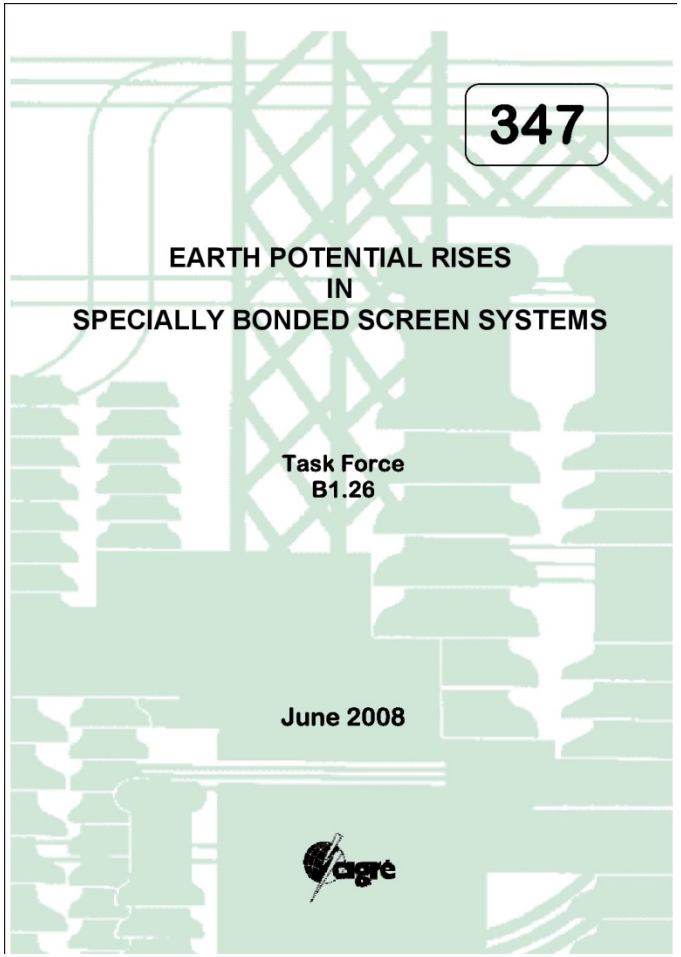
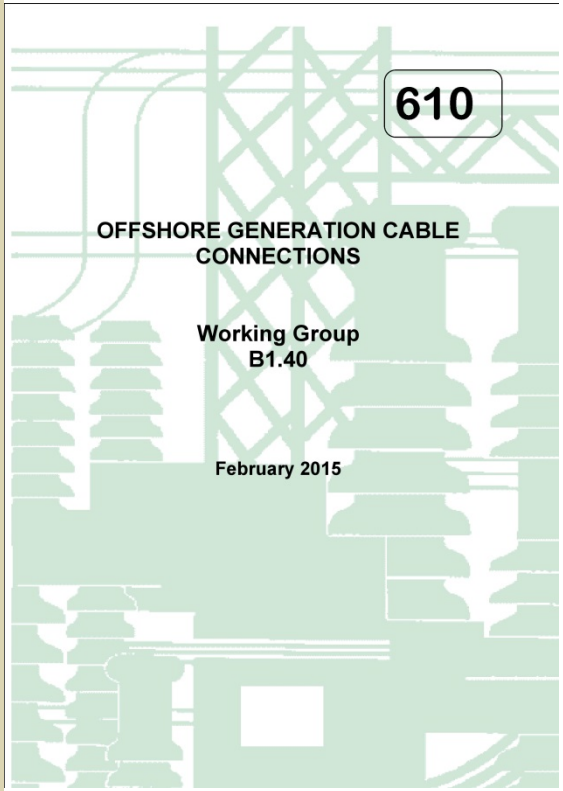
The Future Power System:

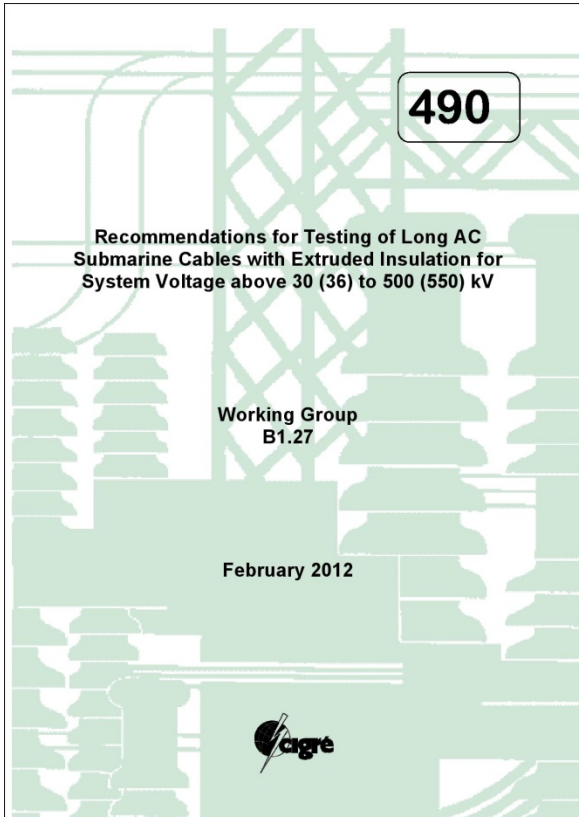
Design Issues

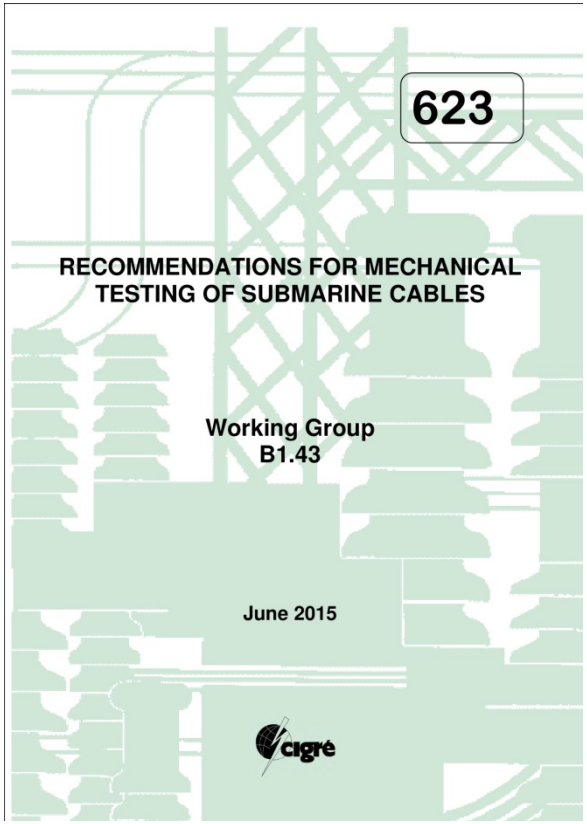




The Future Power System: Increasing Use of Submarine Cables

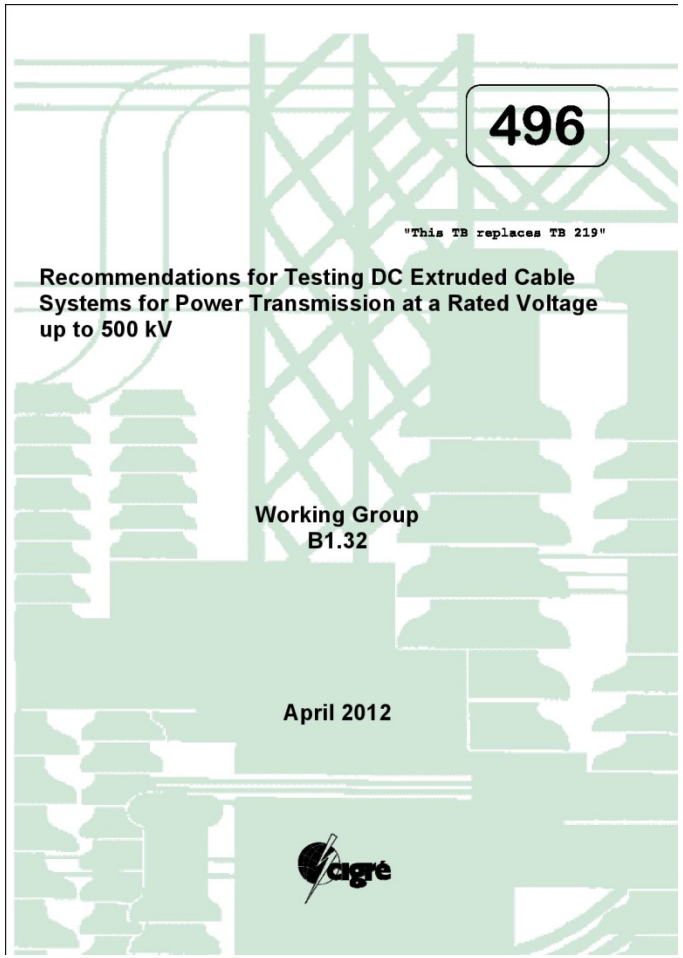


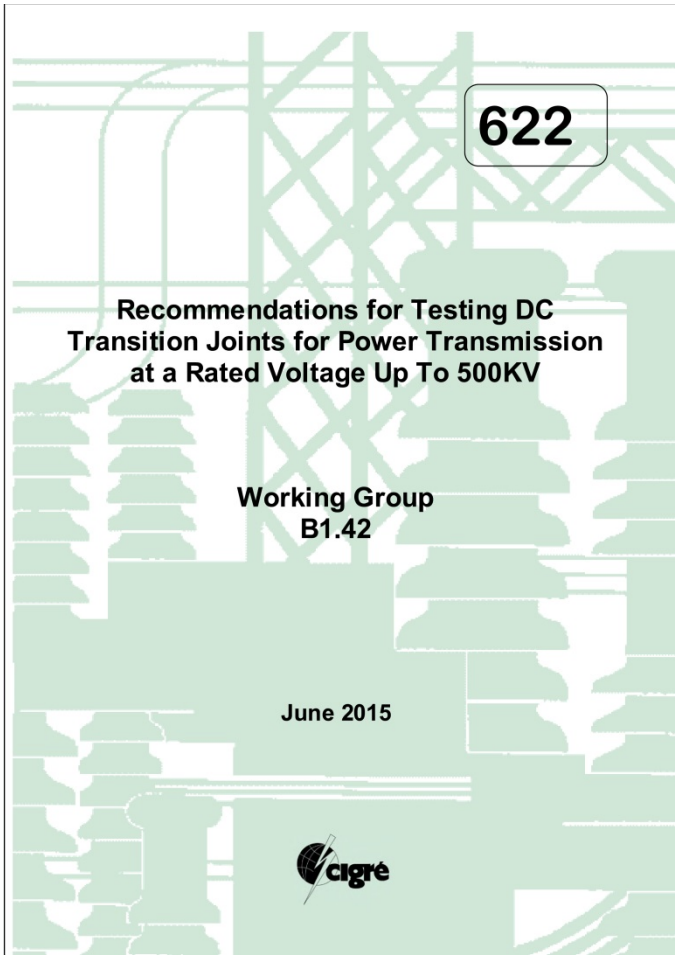




The Future Power System:

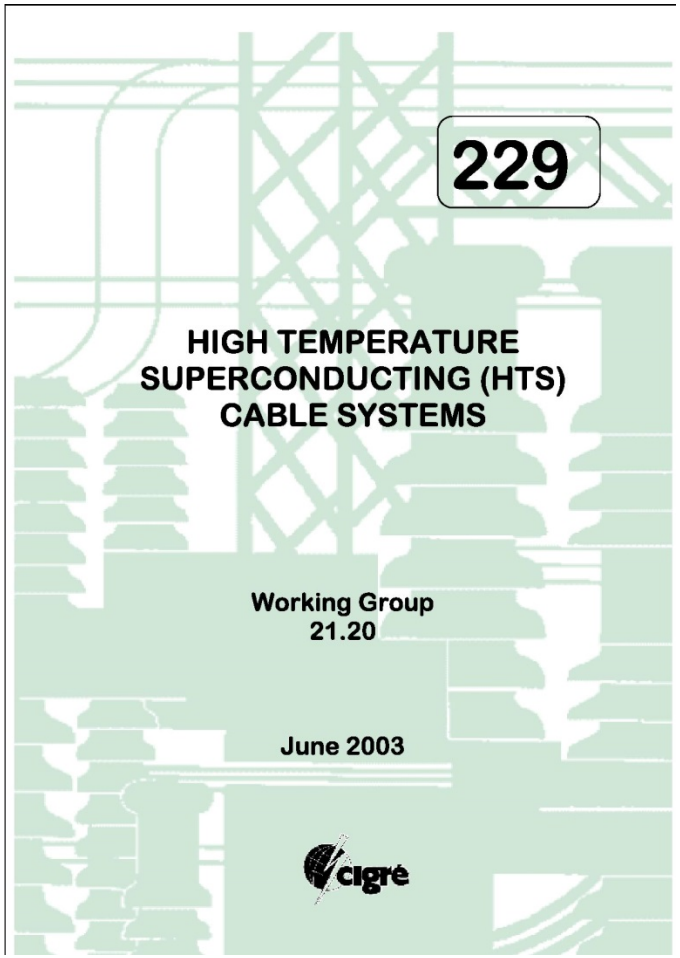
Increasing Use of HVDC

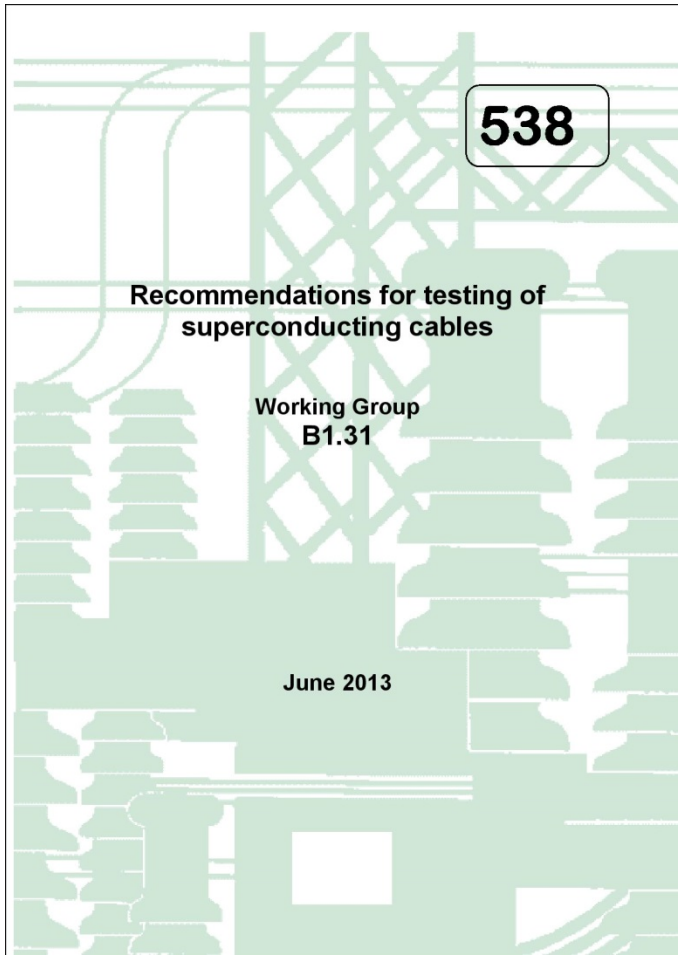




The Future Power System:

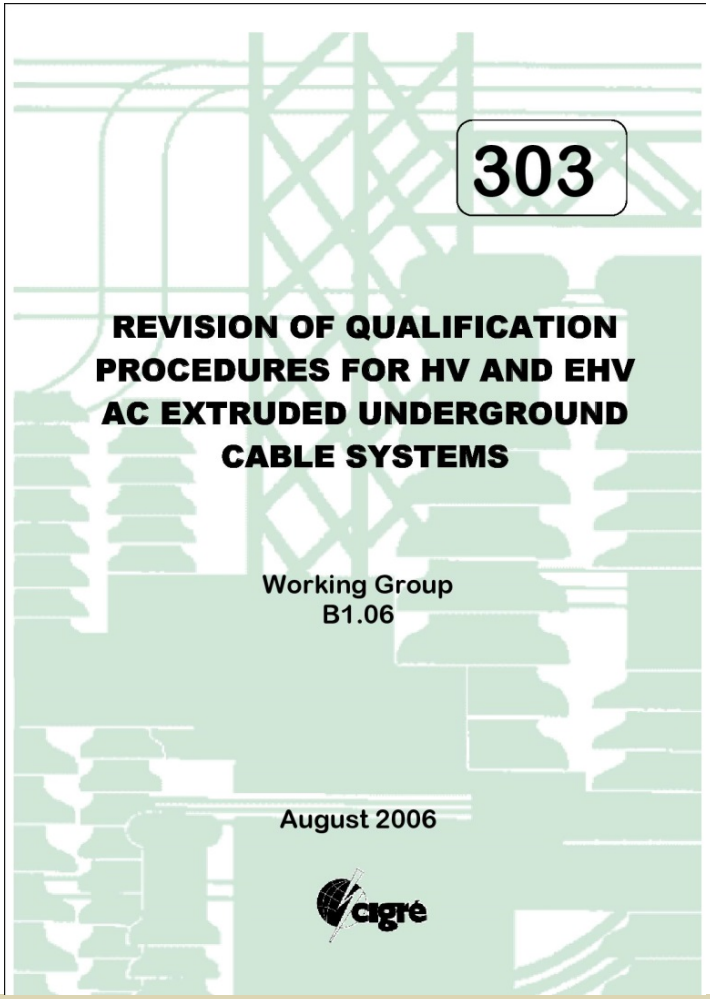
Prepare Use of HTS





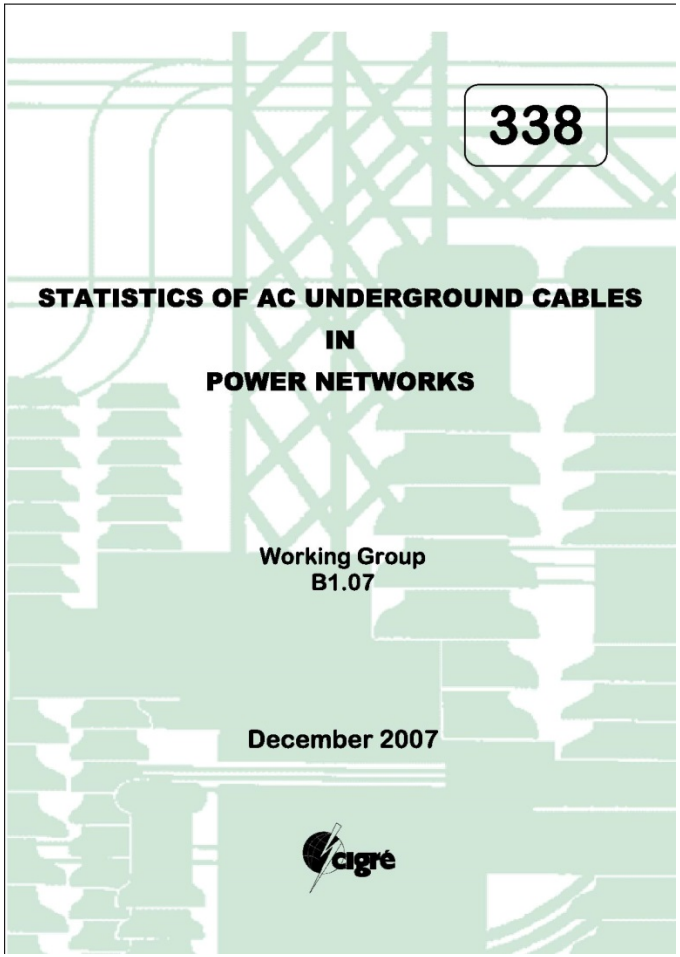
The Future Power System:
Manage Evolution of Qualified Systems

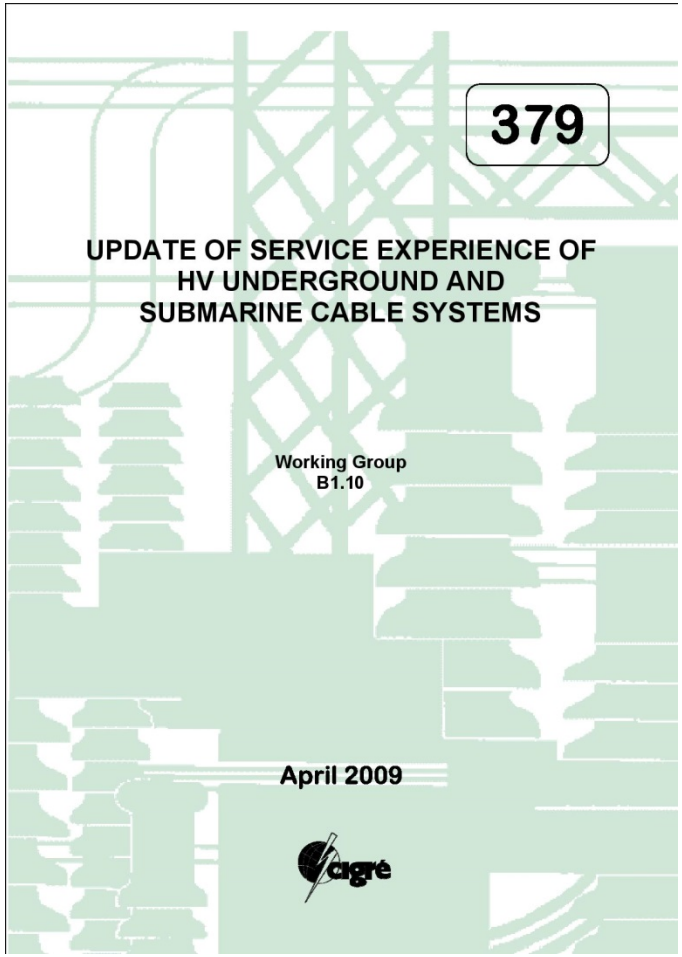
Provide Unbiased Guidelines to manage evolutions
and thus to promote innovations within the frame of existing recommendations



The Future Power System:

Provide Unbiased Information on Service Performance





The Future Power System:

WG B1.47: Implementation of Long AC HV & EHV Cable Systems

WG B1.47

Construction

Construction, Installation:
WG B1.34
WG B1.44
WG B1.48
WG B1.54

Design

Cable & Accessories design:
JWG B1.B3.33 (TB 605)
JWG B1.B3.49
WG B1.51

System design:
WG B1.39 & B1.40(TB 610)
WG B1.50
WG B1.54

Rating, Ampacity:
WG B1.35 (TB 640) +
WGB1.56
WG B1.41

Operation

Testing:WG B1.55
WG B1.28
WG B1.42 &B1.43 (TB622 and 623)
WG B1.46

Operation, Maintenance, Reliability Upgrading:
WG B1.11 (TB 606)
WG B1.37
WG B1.41
WG B1.45
WG B1.52
WG B1.57

Monitoring, Diagnostics:
B1.38

Removal

Possible New Work Items

- Working Groups from Preparatory Task Forces:
- TF B1.58 : Diagnostic Methods used in MV Cable Network
- TF B1.59 : Possible System Design issues
- TF B1.60 : Update of TB 279 on maintenance
- New Items for TF/WG
- Update of cooling systems and possible use of the heat
- Armour losses
- New ways to measure Tan δ (with SC D1)
- Update of TB 194 (WG 21.17) after reports of WG B1.34 ,B1.35 & B1.48
- Further works related to offshore and submarine cables (see SEERC RWG 3)

How Can SCB1 Help SEERC?

- By sharing the experience accumulated in nearly 90 years
  - Around 200 publications since 1969 are available for everyone interested in Underground Cable Systems.
  - HV and EHV , AC and DC, Land and Submarine applications are covered. Lower Voltages topics are more and more addressed.
  - Statistics, Guidelines, are published.
- By preparing recommendations for further Standardization
- By being ready to promptly address any issue identified by SC B1 Target Groups
  - More than 350 experts are currently at work in SC B1 Working Bodies.
  - SC B1 Customer Advisory Group is in charge of proposals for ***New Work Items***
- By offering tutorial sessions (> 25 tutorials available)

- Thank You for Your Attention!