

DRAFT - Guideline for New Project Proposals within CIGRÉ SC B4: HVDC and Power Electronics

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1. Purpose of the Guideline

The purpose of this guideline is to provide assistance in preparation of proposals for New Working Groups (WG) and Task Forces (TF) within SC B4, also referred to as Projects. The guideline includes the following sections:

2. The Mission and Scope of SC B4

The Mission of B4 is “To facilitate and promote the progress of engineering and the international exchange of information and knowledge in the field of HVDC and power electronics. To add value to this information and knowledge by means of synthesising state-of-the-art practices and developing recommendations”.

The work of the Study Committee (SC) addresses all relevant Target Groups (TG) in power industries interested in power electronics. In addition to the technical aspects, the economical/financial and environmental subjects of this technology are also covered.

Study Committee B4 activities include the following subjects:

- HVDC: economics of HVDC, applications, planning aspects, design, performance, control, protection, control and testing of converter stations, i.e. the converting equipment itself and also the equipment associated with HVDC links.
- Power Electronic for AC Transmission and Distribution systems and Power Quality Improvement: economics, applications, planning, design, performance, control, protection, construction and testing.

- Advanced Power Electronics: development of new converter technologies including controls, use of new semiconductor devices, applications of these technologies in HVDC, Power Electronics for AC systems and Power Quality Improvement. Power Electronics used in other fields of the Electric Power Industry, and which are of interest to other Study Committees, will be covered by demand, with B4 being the Sponsoring Committee for any Working Group.

3. Initial Project (WG? TF? what is Project?) Proposal

New WGs and TFS within B4 will be decided during the annual Regular Meetings. To facilitate the decision process, it is recommended that proposals for new activities/projects would be sent in advance. Approved projects would be undertaken either by a Working Group (WG) or a Task Force (TF).

B4 is happy to receive comments and proposals for projects from all CIGRE members interested in its Scope of Work. Since the preparation of a full project proposal involves significant work it may be desirable to first submit an initial proposal. This initial proposal may be relatively informal, but should be made in writing and should contain the following information:

- Brief outline of the scope of work
- Brief outline of the need for the work
- Brief outline of the present state of the art.

The Regular Member or Observer from the member's country may be able to provide assistance with the formulation of the proposal. As a minimum it is recommended that the initial proposal be copied to the Regular Member or Observer.

B4 has established a Task Force (B4- AG02-TF01) to identify the gaps between SC B4 technical activities and the needs of the Target Groups. All initial proposals should be sent to the Chairman of B4 with copies to the B4 Secretary, Convenor of B4-AG02 and Convenor of B4-AG02-TF01. As mentioned above, new work is initiated only at the general B4 meetings, held once every year, therefore, it is desirable that initial proposals are submitted at least 6 weeks before the next general B4 meeting.

The Convenor of B4-AG02 will advise the proposer of the next steps to take, and may be able to provide guidance for writing of the full proposal, if required.

4. Full Project Proposal

It is not necessary for an initial project proposal to be submitted before the submittal of a full project proposal.

A proposal for a new project must include the following:

- Terms of Reference
- An outline of the content of the report
- Identification of the Target Groups for the report
- Time schedule

Optionally a proposal may also include the name and merits of a proposed convenor for the working group to undertake the proposed project.

4.1 Terms of Reference

The purpose is to clearly describe the work to be carried out by the WG, which would be set up to perform the project. Clear and well defined Terms of References helps the WG focus on the intended task and to carry out the work efficiently and within the required time frame.

The Terms of Reference should answer the following questions:

- What is the present state of the art?
- Why is the project needed?
- What is the scope of the WG?
- What subjects should be addressed?
- Which goals should the WG achieve?
- What tasks must be carried out in order to achieve the goals?
- How should the work be delimited in order to keep the WG focused on the scope?
- Which Target Groups should be addressed in the new work?

In addition to the coverage of Technical issues it is important that all new projects give adequate consideration to Economic and Environmental aspects.

4.1.1 Economic Aspects

There are five key areas where the impact of economics of HVDC and power electronic equipment plays a major role, in addition to related technical issues. The identified key areas relate to distinct phases within the context of a project. They are:

1. Planning (feasibility phase)
2. Financing and regulations (commitment phase)
3. Bidding and awarding (evaluation phase)
4. Project design and construction (implementation phase)
5. Operation and maintenance (Operation phase).

4.1.2 Environmental aspects

The planning and construction of HVDC and power electronics projects require a good understanding of the main environmental impacts arising from the system components. If the environmental issues are not covered properly during the project planning, there is an increased risk for severe unacceptable project delays.

Where appropriate, B4 will work with C3, which has environmental issues at the core of its activities.

4.2 Outline and content of the report

As a supplement to the Terms of Reference, the proposal should include an outline of the content of the report in the form of headlines. The outline is not binding for the working group, but its purpose is to give a brief specification of the work that must be carried out.

4.3 Target Groups

B4 has identified the following Target Groups for its reports:

- Top Management Executives and Decision Makers,
- Commercial Groups: Financial ownership, Asset Owners , Investors, Energy Traders, Generators, Distributors, End Customers,
- Technical Groups: Equipment Suppliers, Contractors, Consultants, Maintenance Providers, System Planners, System Operators, Project and Engineering Teams,
- Science, Technology, Regulators and Funding Organizations: Universities, Research Organizations, Regulatory Bodies, International Development Agencies and Banks,
- International Organizations: IEEE, CIRED, National Engineering Organizations, Standards Organizations (IEC, etc).

Each of these Target Groups has different needs and it may be desirable to identify a single primary Target Group for a WG report, to obtain the desired focus for the WG activities. The needs of other, secondary, Target Groups for a WG report may be met through the preparation of special sections of the WG report. Therefore, both primary and secondary Target Groups should be identified in the project proposal.

4.4 Time schedule

For efficient planning, managing and monitoring the performance of the work, a time schedule for the tasks that must be completed in order to achieve the goals of the WG should be specified.

- WG starting date
- Milestones
- Project completion date.

Normally the activities of a WG should be completed within a 3-year period. The WG convenor will submit progress reports to the B4 Chairman and Secretary every 6 months.

4.5 Proposed name and merits of convenor

The name of a proposed convenor may be included in the project proposal. The proposed convenor should be skilled in the project area. Furthermore, the proposed convenor should be able to lead (in English) an international team of experts.

4.6 Submission of Proposals

Full project proposals should be submitted to the Chairman of B4 with copies to the B4 Secretary, Convenor of B4-AG02 and Convenor of B4-AG02-TF01 at least 2 weeks before the next general meeting of B4.

5. How would the project be performed?

If approved the project would be undertaken either by a Working Group (WG) or a Task Force (TF).

Working Groups are the working bodies of the Study Committee. A WG is a group of experts with the task to prepare a technical report on a specific subject defined in the Terms of Reference and within the scope of the Study Committee. The normal term of a WG is 3 years. The final report of a WG will normally be published as a brochure, and an abbreviated report describing content and important highlights will be published as an article in Electra.

A Task Force is a group of experts who has the task to prepare a technical report on a specific subject that requires immediate action or actions within a short time frame, typically within one year or shorter. When interdisciplinary expertises are required a Joint Task Force including experts from other Study Committees may be set up. The final report of a TF will normally be published in the same manner as a WG report.

6. Contact Details

Contact details for the Chairman, Secretary, WG and TF Convenors and Regular Members and Observers can be found by on the SC B4 website: <http://www.cigre-b4.org/>

7. Important Dates

Initial project proposals for work should be submitted as described above at least 6 weeks before the next general meeting of B4.

Full project proposals for work should be submitted as described above at least 2 weeks before the next general meeting of B4.

The date and location of the next SC B4 meeting can be found in the minutes of the last meeting, which is also available on the SC B4 website.