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## **BUSINESS AREA GENERATION PROJECT MANAGEMENT MODEL**

### **Summary**

BA Generation Project Management Model, as described in this document, deals with the execution of projects and specifies Project Governance, Project Management and Project Assurance. The setup is based on the Vattenfall Project Management Model VPMM, *F113*. The document applies for all Projects within BA Generation, with certain exceptions specified in chapter 2 Validity.

The purpose of this document is to support consistent, efficient and effective governance and management of projects.

The model constitutes a framework of general guidance that for a unique project with its business environment normally needs adaptations, while remaining compliant with this instruction as further described.

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APPENDICES:

Appendix 1 – Generic Tollgate Criteria and Minimum Required Information in Decision Documents

## 1 Introduction

This document is part of the BA Generation Management System. Document Owner is the head of P&S Project Office (GP-P). Contact person for this document: BA Generation VPMM Officer.

### 1.1 Purpose

The purpose of this Business Instruction is to support consistent, efficient and effective management and governance of projects by:

- Supporting an efficient and fit for purpose project model application
- Supporting a common understanding of what has to be delivered for project decision making in each of the project phases
- Clarifying generic project governance and project management roles and their responsibilities and mandate levels
- Defining Project Assurance methodologies

## 2 Validity<sup>1</sup>

This instruction is valid within BA Generation

Limitations in validity can apply for co-owned companies and nuclear operations in accordance with *GI01 chapter 9*.

## 3 Target Groups for this document

Target Group / Role	Implication
Project Portfolio Owner	BAG VPMM as described in this document is to be applied by the Project Portfolio Owner.
Project roles	Member of the Project Review Board, Member of the Project Steering Group, Project Sponsor, Project Manager: BAG VPMM as described in this document is to be applied  Project Receiver: Fulfil responsibilities in relation to specifying requirements and acceptance of the project outcome.
Managers and other roles	Relevant line managers: Heads for Project role resources  VPMM Officer: Ensure compliance within BAG to the standard described in this document

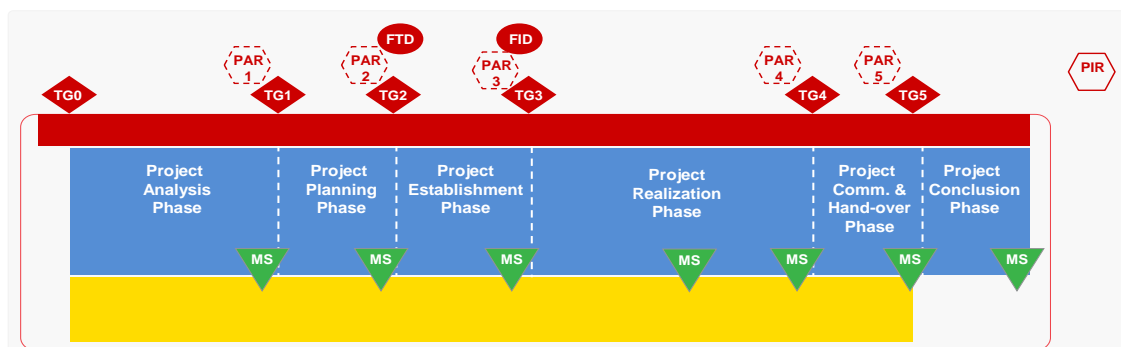
<sup>1</sup> This document has been checked by the document owner prior to approval in order to ensure compliance with legal requirements. If, however, relevant legislation, internal agreements or shareholders' agreements should nevertheless require deviations to be made from one or several rulings in this document, the deviation process described in [GI01](#) shall apply. The document shall be formally implemented in each legal entity, to the extent necessary, in accordance with relevant legislation.

Project Excellence. The general implication is also that the Target Group (or matter representatives) is responsible for feedback, lessons learned, best practice input and improvement suggestions on BAG VPMM in relevant forums.

## 4 Definitions and Abbreviations

Expression / abbreviation	Definition
Project	A Project is a non-recurrent, time-limited and budgeted undertaking for which a goal has been set. A project is planned, managed and performed by a temporary organisation tailored to the specific needs of the project.  There are no economical thresholds connected to the choice of conducting something in project form while differences may exist in the application of funding decision-making.
BAG	BA Generation

## 5 Project Management Lifecycle



All symbols in the Project model follows a colour coding consisting of four colours - red, blue, yellow and green:

- Red is used for Project Governance with its activities and responsibilities (e.g. the PPO, Tollgate decisions etc)
- Blue is used for Project Management with its activities, subjects groups and responsibilities (e.g. the Project Manager, phase descriptions etc). Project management decisions are made here.
- Yellow represents the operational work and development processes in the life cycle of projects. These processes are business specific and not described in VPMM.
- Green is used for project milestone and project results and constitutes the important interface to the Work process (can be more than tollgates, as indicated).

The generic Project Management Lifecycle is divided by project tollgates (TG0 – TG5) into six phases. The generic tollgate criteria are defined in Appendix 1 – Generic Tollgate Criteria and Minimum Required Information in Decision Documents. As tollgates are passed, risks and uncertainties against planned benefit (Business Case) scope and results of the project gradually are reduced. Active use of earlier experiences are always to be utilised. It is assumed that risks and uncertainties are dealt with as early as possible in the process [Front End Loading] when the opportunity to influence changes in the solution is relatively high and the cost of performing them is relatively low.

At each tollgate in the project lifecycle the readiness of a project to continue into the next phase is assessed. Part of this assessment is to look back at the completeness and quality of work done, to look forward at the plan and availability of funding (adequate business decision) for the next phase and to look at the Business Case, specifically at the creation of business value and at strategic alignment. It is recommended to let a tollgate be preceded by a project milestone (MS) to support the project readiness assessment. The project can specify additional milestones to facilitate a structure of the project work and / or monitor progress. Tollgate decisions can further be preceded by a PAR (Project Assurance Review), as defined in section 5.4 – Project Assurance.

When a decision is made to end a project in beforehand, this decision shall be designated TG5 where the Project enters the Conclusion phase, conducts the regular activities of that phase and delivers the input to a final MS decision.

At the end of the project – or if appropriate at the end of every project phase – lessons learned are to be identified, documented, followed up and pro-actively shared with other projects that might benefit from the learnings. Responsibility for this lies with the Project Manager.

After the outcome of the project has gone through at least one full year of production (at the latest 2 years after final MS), a Post Investment Review (PIR) can be conducted, as defined in section 5.5.

## **5.1 Application**

The nature of a project and its environment can justify adaptation of the generic standard.

A fit-for-purpose (efficient) application of project management and steering shall normally always be evaluated towards the unique conditions of the project.

PPO takes the decision of made fit-for-purpose application which shall be documented in the Project Initiation Note (PIN) or equal, as per appendix 1.

General guidelines for utilising a fit-for-purpose application are given in:

- 5.3 Tollgate Decision Making
- 5.4 Project Assurance
- 6.2.1. Project portfolio Owner
- Appendix 1

To further justify a true fit-for-purpose application from given guidelines a Project Criteria Model or equal shall be established by the BU, taking in account its specific business environment, which at first-hand shall make considerations of project complexity, value and risks.

An established Project Criteria Model shall be compliant with this instruction, reviewed by the Document Owner and approved by the PPO.

## **5.2 Project Phases**

### **5.2.1 Pre-TG0**

Pre-TG0 the business plan defines demands formed as a portfolio of proposed investments or a business opportunity to the extent that at TG0 a decision can be made by the PPO in the Project Review Board (PRB, see 6.1.1) about whether or not a proposed investment or opportunity should lead to the initiation of a project.

For existing asset businesses with a portfolio of proposed investments the needed bases for both the Project Charter and the Business Case as per Appendix 1 shall be created in this phase to an extent acceptable for the organisation managing the project.

The outcome of the TG0 decision is an approved Project Charter including a description of the Business Case.

#### 5.2.2 Project Analysis Phase (TG0 – TG1)

After a positive TG0 decision, a Project Initiation Note (PIN) is prepared, based on the Project Charter, in which the PPO assigns the project to a Project Sponsor and provides specific direction. If appropriate the Project Sponsor can be proposed prior to TG0, e.g. supporting in Project Charter review and / or PIN proposal.

The Project Sponsor is responsible for the appointment of a Project Manager.

During this phase the business demand (requirements and constraints) and the full range of alternatives to satisfy this demand (optionality) are identified. In addition their feasibility is demonstrated and mutually assessed. The best alternative(s) is selected and the basic requirements are determined for detailed planning during the Project Planning phase.

The Project Receiver is obliged to take part of the Project Analysis phase, to ensure that the requirements of the receiving organisation are captured and that the project outcome supports the strategic direction of the business. It is applicable also as part of the governance structure. The phase ends with a TG1 decision.

#### 5.2.3 Project Planning Phase (TG1 – TG2)

In this phase the most feasible alternative is identified (if not managed in the previous phase) and given a clear definition on requirements and the overall project scope is identified for planning and managing its delivery. In case of tendering the project strives to create a competitive setting. The project outcome is defined in such detail that tendering (if applicable) can commence after the next tollgate. The phase ends with a TG2 decision.

#### 5.2.4 Project Establishment Phase (TG2 – TG3)

In this phase the chosen alternative is specified and engineered to a level that uncertainties are essentially managed and demonstrated in a proposed project budget. In case of tendering identified suppliers are invited to tender, the bids are evaluated and the preferred suppliers are selected (all in line with the Contracting Strategy of the project and with *FI12 - Procurement*). If applicable, the solution to be delivered by the project is further optimised together with the supplier(s). The phase ends with a TG3 decision.

A positive TG3 decision requires the release of investments funds for the remainder of the project by an adequate business decision: the Final Investment Decision (FID) according to GI04 and GI05. The TG3 decision is conditional until a positive FID is taken. A positive TG3 and FID decision are both required for signing contracts with suppliers. Nevertheless, it is possible to sign contracts prior to FID (e.g. consultancy contracts, early works agreements or supply contracts conditional to FID) provided PRB approval and that the funds have been released in line with *GI04*. See further on relations to business decision making in section 5.3.

#### 5.2.5 Project Realisation Phase (TG3 – TG4)

In this phase the project outcome is realised/constructed according to the approved plans. Construction (erection) can be conditional in some businesses. Commissioning can commence during this phase, if applicable. In case of external supplies the negotiated contracts with suppliers are signed (see *FI12 – Procurement*). The phase ends with a TG4 decision.

#### 5.2.6 Project Commissioning and Hand-over Phase (TG4 – TG5)

In this phase commissioning is concluded, if applicable. After acceptance procedures and requirement verifications are performed the project outcome is handed over to the receiving organisation. The phase ends with a TG5 decision.

This decision shall be made when the project acceptance procedures and requirement verifications have been performed successfully and the Project Receiver has accepted the project outcome. Handover of remaining items in the project may be agreed between the project and the receiving organisation if they are clearly described (Punch list) and the conditions for handover are agreed between the project and the receiving organisation.

#### 5.2.7 Project Conclusion Phase (TG5 – final MS)

In this phase the experiences and lessons learned from all project phases are documented in a Final Report. The end-state of the project and its outcome are evaluated and compared to what was expected in the beginning of the project and at TG3 as documented in the Project Charter, the PIN and the Project Management Plan.

The final project milestone marks the conclusion of the project. If applicable, the project sponsor will hand over all necessary documentation for the Post Investment Review (PIR) to the Project Receiver.

The milestone review shall confirm that all outstanding issues are taken care of so that the Project Sponsor can formally close the project.

### 5.3 Tollgate Decision Making

The main principle is that all tollgates always are to be used, while they can be delegated by the PPO to Project Sponsor and the Project Steering Group.

The general intention of the tollgates are as follows:

TG0 = Decision to start a project

TG1 = Decision on which alternative concept solution to select.

TG2 = Decision on requirements and scope

TG3 = Decision on realising the project result.

TG4 = Decision on start of hand-over to receiving organisation.

TG5 = Decision on accepted hand-over and start conclusion of the project

If there are more specific needs to of what is to be accomplished within a project phase (e.g. specific deliverables or focus areas) beyond definitions in section 5.2 the concerned tollgate criteria shall be further defined accordingly. This also implies that the general intention of a tollgate as above might need to be changed, e.g. that the decision of alternative need to be done later, at TG2, or that the basis for procurement comes earlier, at TG1, when based on an functional delivery, or if realisation basis needs to be decided on earlier than TG3 in a tendering project. Further, if specific sign-offs are seen mandatory the concerned tollgate criteria shall be further defined accordingly. Made sign-offs shall always be documented and made available to the PRB.

A tollgate decision is made by the PPO in the PRB and is based on a recommendation from the Project Sponsor and evaluation by the members of the PRB. A tollgate decision is supported by a minimum set of documents as specified in Appendix 1. In the appendix also the minimum required information is listed which has to be included in the documents for a TG decision.

Adequate business decisions may be required before a tollgate decision is final. Specifically the decision to commit/invest funds during a project phase has to be taken in line with adequate business governance instructions before such tollgate is valid. In such a situation a TG decision is conditional until a positive adequate business decision is made.

It is often essential for project progress to carefully plan for adequate business decision making. If applicable it is accepted to plan and request funding including the estimated time for adequate business decision making, avoiding the project to halt meanwhile.

Throughout the project lifecycle, all changes to the documented and agreed project scope, - quality, - budget and -time frame which exceed tolerances agreed with the Project Sponsor must be handled according to a change control procedure defined or referred to in the Project Management Plan.

#### 5.4 Project Assurance

Two main Project Assurance methodologies are available under the concept of Project Assurance Review (PAR). Either assurance can be made by an independent party or as a self-assessment. Independent reviews are conducted as Value Assurance Reviews (VAR) or as a defined simplified equivalent adopted for the concerned business environment. Independent reviews aim to provide the main internal project stakeholders with an independent holistic view about the project health and its readiness to proceed to the next project phase. Self-assessments are designated Project health Check (PHC). PHC is a more simple form of assurance, with the same purpose but with no true independence as it is managed by the Project Sponsor.

A Project Assurance Plan has to be compiled for each project as part of the Project Initiation Note (PIN) or as part of the Project Charter if the scope of the PIN is included in that document. It describes if and when to conduct a PAR and if to conduct the PIR (section 5.5).

If an independent review is not applicable for a Tollgate, the Project Sponsor has to ascertain the readiness of the project to enter the next project phase by initiating a PHC, or act as defined in the PIN.

Pre-TG3 PARs have the main aim to foster the Front-End-Loading process and thus maximise value. The main focus of the standard pre-TG3 PARs are:

- PAR1 (TG1) - Has the business demand been understood and the full range of strategic/business alternatives been identified and their feasibility assessed across all STECOP-R dimensions and in the project portfolio context? Is the underlying reasoning sound and transparent?
- PAR2 - Is the selected alternative sufficiently defined for further planning and delivery management and / or to go outside for tendering? If applicable, is the selected alternative still the best choice?
- PAR3 - Is the project, across all STECOP-R dimensions ready for TG3? Is the business case robust enough? Have all major risks been identified and sufficiently treated? Is the project prepared for the execution?

The focus of Post-TG3 PARs lies on a safe value realisation:

- PAR4 – Is everything in place to ensure a safe handover?
- PAR5 – Have the agreed deliverables been managed? Is the project outcome (incl. possible Punch List and documentation) accepted by the Project Receiver? What has been learned during the project?

#### 5.5 Post Investment Review

Post Investment Reviews (PIRs) are conducted after the project outcome has gone through at least one full year of production, at the latest 2 years after final MS. PIRs appraise if the assumptions made at FID have been realistic and if the outcome, which has been created by the project, performs as expected. The root causes for deviations between FID and actual performance are analysed and shared within the project community, so that lessons learned can be implemented to improve the performance of future projects.

*FI29 Finance Governance* determines for which projects it is mandatory to conduct a PIR.



## 6 Roles and Responsibilities

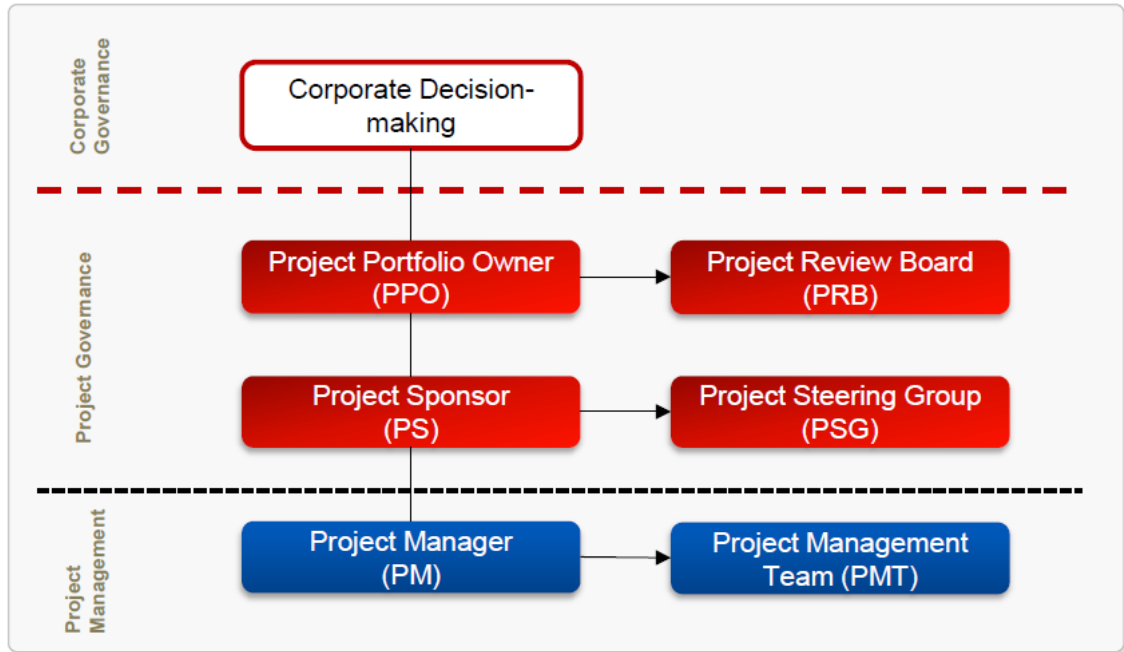


Figure 2 – Project Governance Structure

In this section the project governance parties are defined, their roles and responsibilities are stated and the interface to business governance is described.

### 6.1 Project Governance Structure

The Project Governance structure (see Figure 2) shows the interdependence of bodies involved in directing and controlling projects. It furthermore defines the management roles related to each of the bodies and their responsibilities and mandate.

Financial funding require adequate business decision making with the relevant authority as specified in *G104* and its appendices. The Project Governance structure is applied in Tollgate Decision Making as described in section 5.3 of this document.

#### 6.1.1 Project Review Board (PRB)

The PRB is in charge of steering, supervising and supporting projects and assures the quality of (proposed) decisions. It is the forum in which the PPO makes decisions.

##### Composition

- The PPO chairs the PRB
- Members of the PRB represent:
  - The organisation receiving the project output
  - The organisation managing the project
  - Asset Management
  - Investment Control
  - SF Strategy
  - Invited Subject Matter Experts (SMEs) as applicable, eg. technical experts, finance, purchasing, strategy, legal, tax, etc.