Renewables - Project Execution Excellence

Project Controls

April 2025

KEARNEY

torrent POWER

Agenda for project controls

1. **Project controls objectives**
   Program objectives to set-up effective project controls for Torrent
2. **As-is assessment of project controls**
   Maturity assessment of Torrent's existing project controls to identify gaps & pain points in line with best practices
3. **Direction for Project Management Organization (PMO)**
   Objectives, mandate & structure for Project management office
4. **Governance & review mechanism**
   Governance tiers and meeting charters detailing agenda, attendees and delineation of roles across tiers
5. **Performance tracking**
   Relevant KPIs to track performance across project stages
6. **Reporting templates**
   Standardized reporting templates developed to comprehensively capture information
7. **Dashboard Wireframes**
   Dashboard wireframe to be used across different review levels

TPL's objective is to establish effective project controls & monitoring capabilities across project lifecycle

Key themes for improvement[1]

Robust governance, greater transparency & standardized digital dashboards to streamline processes & prevent delays

Objectives

1. Set-up a robust project monitoring structure

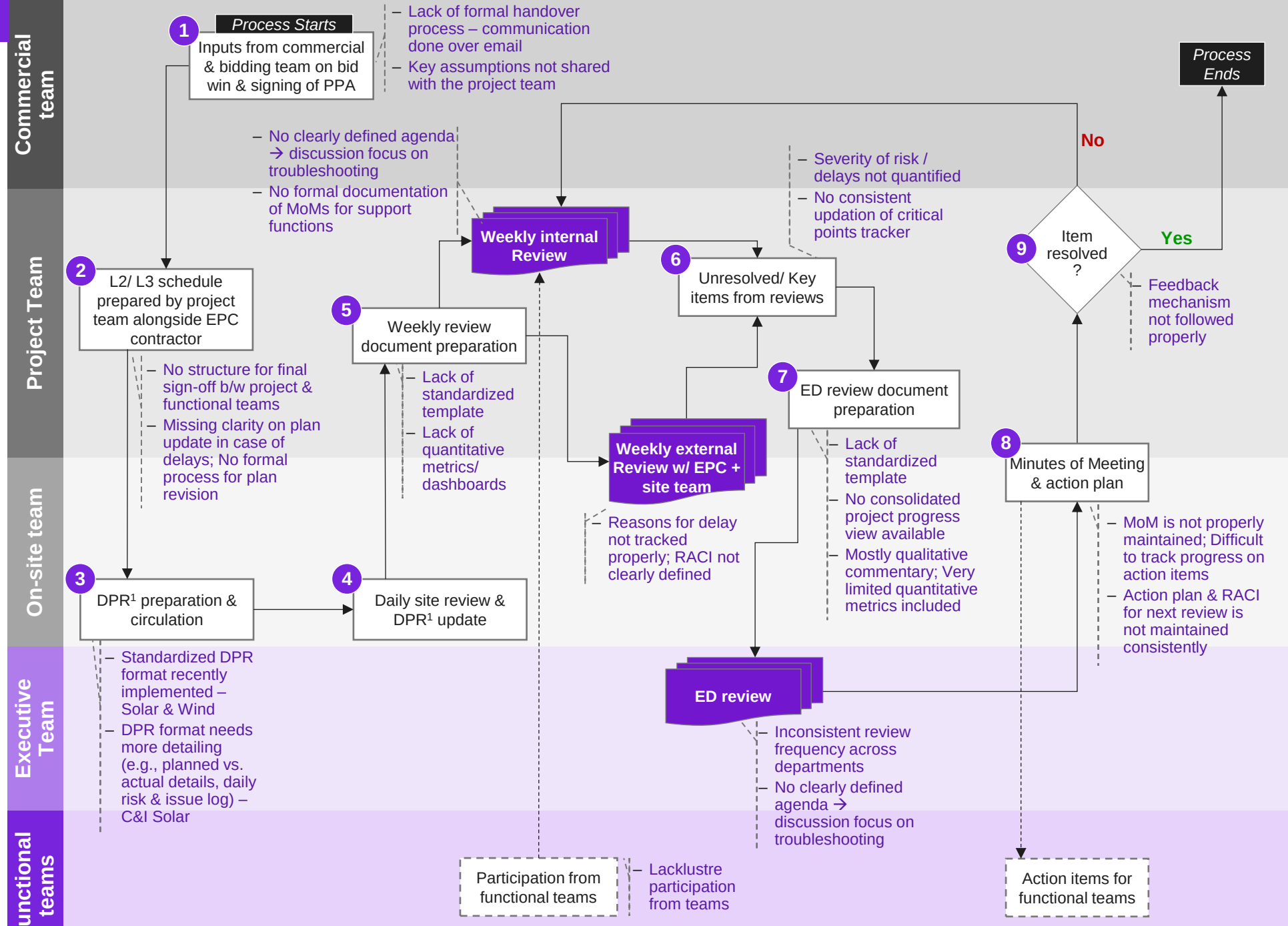
2. Define project monitoring approach & establish effective governance

3. Ensure transparency through standardized dashboards & reporting (digital included)

4. Develop seamless approach to deliver renewable projects

The existing project controls setup is not clearly defined and lacks transparency

Interaction insights



1. DPR = Daily Project Report

Existing setup has been assessed on a maturity framework with 6 core dimensions & 15 sub-dimensions

Evaluation framework

A. Project monitoring organization

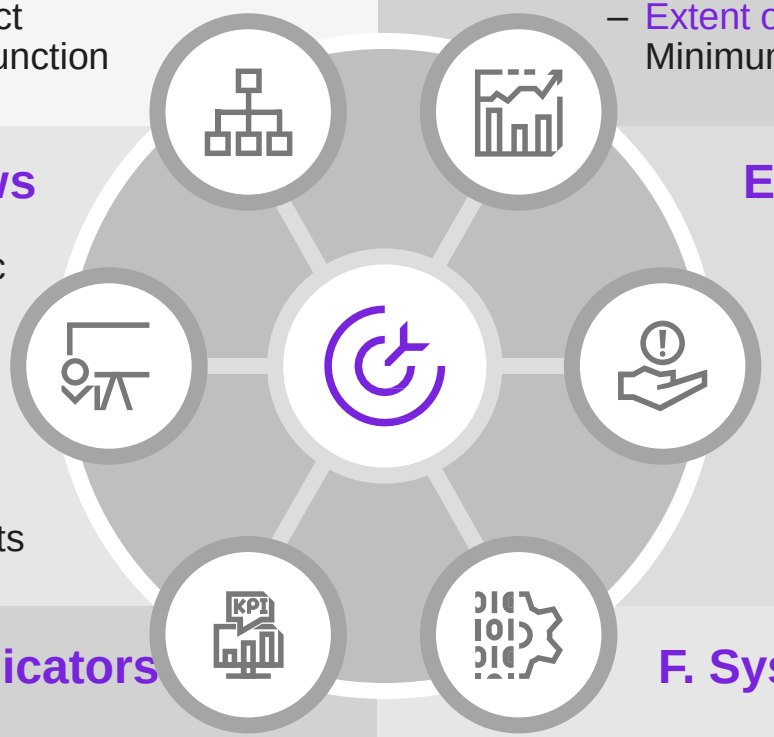
- Strategic alignment: Project monitoring philosophy embedded within organization
- Degree of control: Project management takes a lead role
- Degree of centralization: Project management is a centralized function

B. Governance & reviews

- Structured reviews: Systematic cadence for project evaluation
- Defined escalation matrix: Clear issue escalation process
- Standardized templates: Standardized review documents

C. Key Performance Indicators

- Coverage: KPIs cover all aspects – Schedule, budget, quality, safety
- Measurability: KPIs are specific & quantifiable
- Reporting frequency: KPIs are tracked and reported on a timely basis



D. Tracking & reporting

- Standardized dashboards: Standardized project monitoring dashboards
  - Degree of customization: Flexibility to tailor reports for specific projects/ stakeholders
    - Extent of manual intervention: Minimum manual reliance

E. Risk management

- Risk identification: Pro-actively identify risks
- Risk monitoring & mitigation: Effectively track & resolve risks

F. Systems

- Technology enablement: Leverage digital tools & platforms to streamline & automate control

The maturity scorecard for TPL's current project controls highlight a significant potential for improvement

Maturity assessment summary

S. No.	Dimension	Sub-dimension	I	II	III	IV
A	Project monitoring organization	Strategic alignment				
		Degree of control				
		Degree of centralization				
B	Governance/ review structure	Structured reviews				
		Defined escalation matrix				
		Standardized templates				
C	Key Performance Indicators (KPIs)	Coverage				
		Measurability				
		Reporting frequency				
D	Tracking & reporting	Standardized dashboards				
		Degree of customization				
		Extent of manual intervention				
E	Risk management	Risk identification				
		Risk monitoring & mitigation				
F	Systems	Technology enablement				

Multiple gaps were identified during our review of project monitoring organization

Illustrative

Capabilities present

Shortcomings

A. Project Organization

Sub-dimension	I	II	III	IV	Torrent's current practices	Select best practices (Level 4 – World class organizations)
Strategic alignment					– Project monitoring done at an L1 level (People-driven instead of process-driven) – Project control methodologies are not integrated into organization workflows – no seamless flow of updates – Framework to track overall portfolio progress against strategic objectives is missing	– Organization is aligned to overall project monitoring philosophy – Project control methodologies are embedded in the organization
Degree of control					– Limited & inconsistent monitoring without defined PMO setup – Degree of independence and empowerment yet to be established	– Project management is viewed as a leader within the organization
Degree of centralization					– Lack of a centralized PMO function/ Center of Excellence in the organization	– Project management is centralized within the organization allowing for the development of a center of excellence and supporting infrastructure – The overall project portfolio is prioritized ahead of optimizing individual projects

Multiple gaps were identified during our review of governance & review processes

Capabilities present

Shortcomings

B. Governance & review

Sub-dimension	I	II	III	IV	Torrent's current practices	Select best practices (Level 4 – World class organizations)
Structured reviews					– Governance cadence exists – Weekly internal reviews to track progress & discuss issues – Weekly external review of engineering, supplies & productivity with EPC – Fortnightly/ Monthly ED reviews – However, reviews lack structure, agenda & discipline – Participation from all stakeholders (incl. functional heads) is required	– Structured periodic reviews with clearly defined frequencies at each level of review – Meetings occur at a regular time and follow a specific duration, for example, every Wednesday morning at 9 AM for 1 hour
Defined escalation matrix					– Escalation process in place to escalate issues across reviews – However, escalation process is not being clearly followed on a regular basis – Comprehensive issue tracker is not being maintained; Reason for issue, criticality level, RACI, target closure date missing across multiple instances	– Clearly defined escalation mechanism to ensure that only the issues not solved within a specific timeline are reviewed at the next level
Standardized templates					– Standardized & tailored review templates are not being used; Quantitative view on portfolio performance is absent – Action items from last meeting/ for next meeting not properly tracked & reported – Well-defined dashboards to conduct reviews are needed	– Standardized templates that are tailored to the frequency of review. For e.g., a daily review looks at the daily target on critical path work packages as opposed to a monthly review which looks at overall project performance – Well-defined decks & dashboards are used routinely for the ease of updating each meeting

Multiple gaps were identified during our review of current Key Performance Indicators (KPIs)

Sub-dimension	I	II	III	IV	Torrent's current practices	Select best practices (Level 4 – World class organizations)
Coverage					– Limited KPIs are being tracked & reported – KPIs do not cover all aspects of project performance across lifecycle; Metrics on safety, vendor performance etc. are missing from review reports – KPIs are not developed to link them with project objectives	– KPIs comprehensively cover all the project elements: safety, budget, quality and schedule – Contractor performance is tracked against KPIs tailored to the specific project
Measurability					– Measurable KPIs to track ongoing project progress are in place – However, measurable/ concrete KPIs are missing to track overall performance (e.g., project longevity, quality)	– Specific, measurable project KPIs are used to track and evaluate project performance – KPIs tracked are both backward and forward-looking
Review frequency					– Few key metrics (focused on project progress) are being tracked on a periodic basis through DPR & weekly reviews – Adherence to review plans is not well tracked	– KPIs are reviewed and monitored on a weekly / monthly basis

Capabilities present

Shortcomings

C. Key Performance Indicators (KPIs)

Multiple gaps were identified during our review of tracking & reporting practices

Capabilities present

Shortcomings

D. Reporting

Sub-dimension	I	II	III	IV	Torrent's current practices	Select best practices (Level 4 – World class organizations)
Standardized reporting dashboards					– Lack of standardization in reporting format across departments – Quantitative reporting is lacking across templates – RACI/ target timelines are not clearly defined for action items; Minutes of meeting are not being maintained consistently	– Clearly defined dashboard exist for all projects to track physical and commercial progress
Degree of customization					– L1/ L2/ L3 schedule is prepared separately for wind & solar projects with multiple stakeholder inputs – Customized dashboards to cater to specific project/ stakeholder requirements are not prepared – Clear demarcation of data to be presented for each review level is absent	– Dashboards are customized based on the project requirements – Data for each level of review is clearly defined and follows a cascading architecture
Extent of manual intervention					– Reliance on manual data update across processes	– Most of the data is auto updated or system generated with limited manual intervention

Multiple gaps were identified during our review of risk management & systems in-place

Capabilities present

Shortcomings

E/F. Risk management & Systems

Sub-dimension	I	II	III	IV	Torrent's current practices	Select best practices (Level 4 – World class organizations)
Risk identification					– Risk register is selectively implemented & maintained (in wind) – Lack of a structured process for pro-active identification risks – Critical point tracker is missing in places (Solar)	– Formal process in place to identify, monitor and mitigate technical, financial and operational risks – All main functions, including suppliers and contractors are involved in risk identification process
Risk monitoring & mitigation					– Lack of defined risk management framework; Firefighting done through emails – Absence of codified risk monitoring & mitigation process	– Risks are monitored & reviewed at each project stage by a separate cross-functional and cross-project task force – Ownership for tracking critical risks and driving mitigation actions is clearly identified with a single-point reference – Contractors are integrated in cross-functional team for risk monitoring and mitigation
Technology enablement					– Limited technology or IT tools – Drill down dashboards for project schedule and KPI reporting are not used – Detailed online repository for root cause assessment, knowledge sharing is not present	– Latest digital tools are utilized by the firm for streamlined project monitoring & management – Seamless adoption via regular trainings & integration of systems across functions

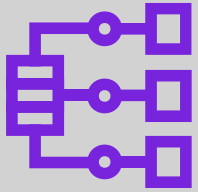
Overall, current project controls set-up has significant gaps that pose challenge to scale-up aspirations

Maturity assessment summary

Dimension	Key gaps & shortcomings	Impact on scale-up
Project monitoring organization	– Lack of process-driven structured project monitoring framework – Absence of centralized PMO	– Limited oversight due to irregular monitoring leading to delay in achieving strategic targets
Governance/ review structure	– Lack of structured governance reviews with inconsistent stakeholder participation – Absence of agenda, charters & proper escalation mechanism	– Limited visibility on project performance & delay in resolution of critical issues leading to potential delay in project timeline which magnifies with scale up
Key Performance Indicators (KPIs)	– Limited set of KPIs leading to gaps in performance tracking – Quantitative/ measurable KPIs are missing	– Lack of quantitative KPIs across the project lifecycle fail to provide comprehensive project view leading to safety, quality & performance risks
Tracking & Reporting	– Lack of standardization in reporting formats across departments – Dashboards are not customized/ automated based on review levels	– Inconsistencies in data & dashboards, and inefficiencies in project tracking leading to potential delays as the capacity scales up
Risk management	– Reactive approach to risk management – Lack of codified risk mitigation process	– Inability to effectively foresee, monitor & mitigate risks leading to operational disruptions & cost/ schedule overruns
Systems	– Inadequate adoption of IT tools for project scheduling & monitoring	– Lack of automated processes leading to potential errors & gaps in project monitoring

As we look at the best-in-class controls set-up, there are 6 key considerations for TPL

1. Clear mandate for PMO.



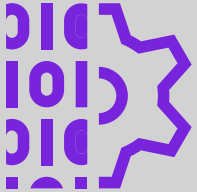
2. Robust governance structure & review mechanism.

3. Measurable metrics.

4. Standardized reporting.

5. Proactive Risk management.

6. Proliferation of systems/ tools.



PMO envisaged as a transformational function with a mandate to drive excellence & enhance performance

Potential mandates for PMO

Role

Reporting ☆

– Data collection
– Performance tracking
– Potential issue identification

Operational

– **Reporting PMO +**
– Provide over-arching process framework, PMO practices & tools
– Facilitates / operationalizes best practice delivery
– Drive PMO excellence

Transformational

– **Operational PMO +**
– Strives for value enhancement
– Supports realization of synergies across firm
– Constantly innovates and improves project processes
– Establishes new way of working
– Deploys own staff to monitor strategic projects

Value-add

+ Tracking, auditing & reporting

+ Standardization
+ Collaboration
+ Mentoring and coaching of project execution team

+ Value assurance
+ Transformation management: changing the DNA
+ Continuous improvement

☆ *Torrent PMO*

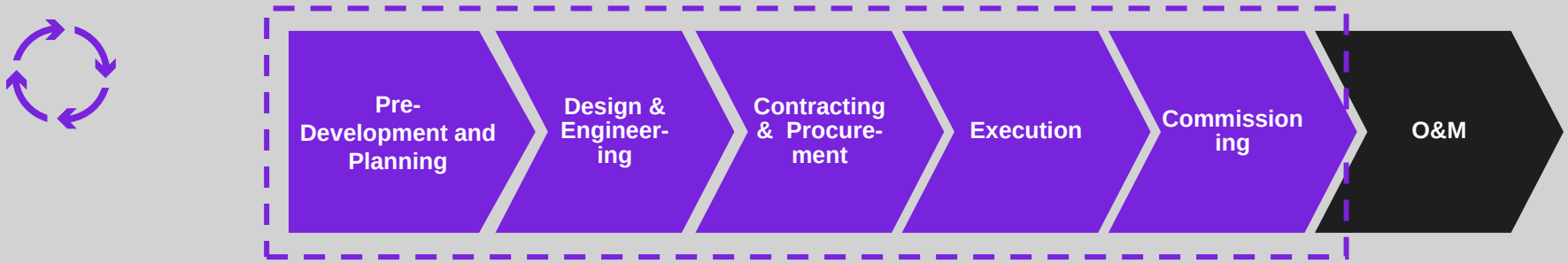
1. Clear mandate for PMO

PMO scope covers monitoring project execution from planning to commissioning

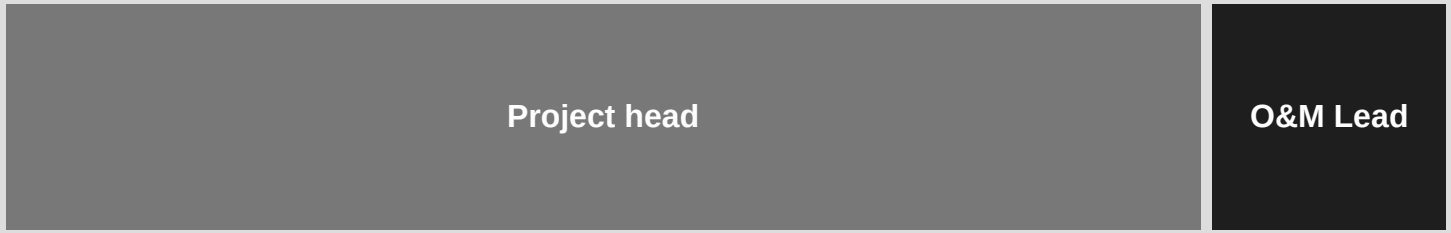
Project lifecycle and handovers

Project lifecycle

Battery limits for project control



Process & KPI ownership



Controlling & monitoring

Performance assurance & enhancement

PMO to deliver on four key objectives

Preliminary

To be discussed

Project Execution Excellence Objectives for PMO

Schedule Adherence

- Ensure strict adherence to planned schedule
- Escalate in case of deviations beyond acceptable threshold
- Expedite resolution process for underlying reason behind delays

Risk Avoidance & Mitigation

- Minimize risk occurrence probability with proactive mitigation strategy for critical concerns
- Enable cross-functional coordination for the identified mitigation steps

Safe Environment Establishment

- Ensure safe working environment by ensuring high quality, safety & environmental standards

Cost Observance & Adherence

- Ensure capex plan is in line with targets
- Escalate in case of deviations beyond acceptable threshold

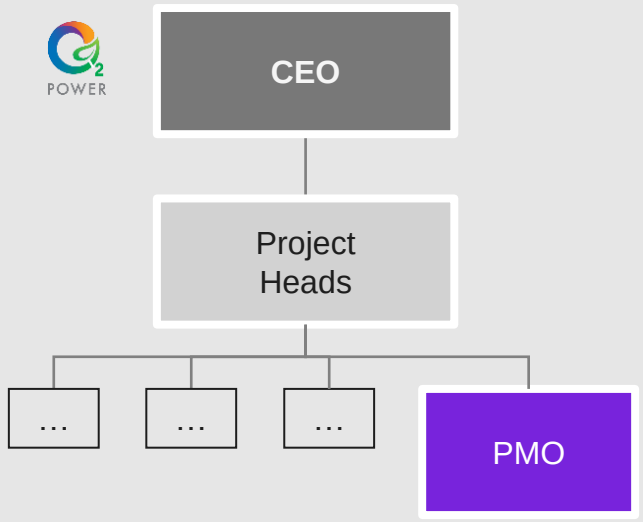
#1 **#2** **#3** **#4**

Target for PMO, project and functional teams to jointly deliver excellent performance against all KPIs and provide expedited support in case of deviations/ operational roadblocks

Strategic options for PMO

To be discussed

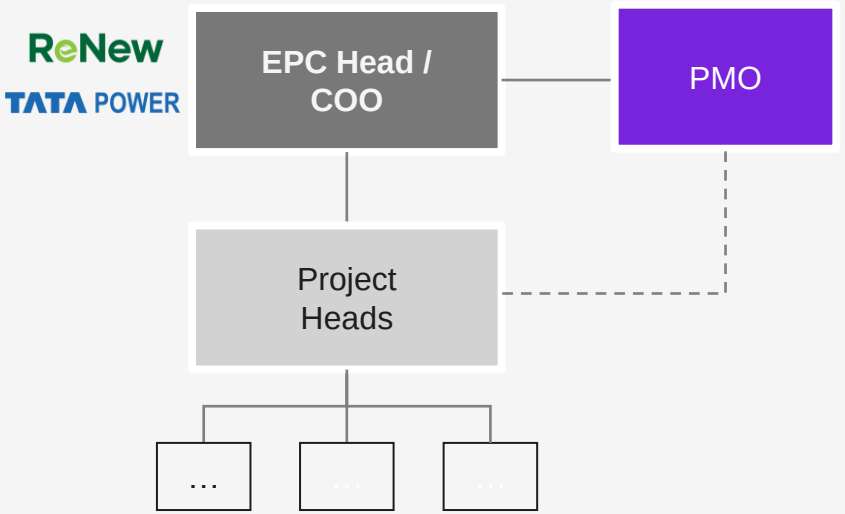
PMO reports to Projects Director who is the single point window for all information on project status



- Cost and schedule control rest under Project Director who also has ultimate accountability on cost and schedule KPIs
- Single point accountability of all projects
- Dedicated project focus

- Potential conflict of interest in channeling information upwards

PMO reports directly to Business head / ED, dotted line reporting to Project Director/ Project Manager

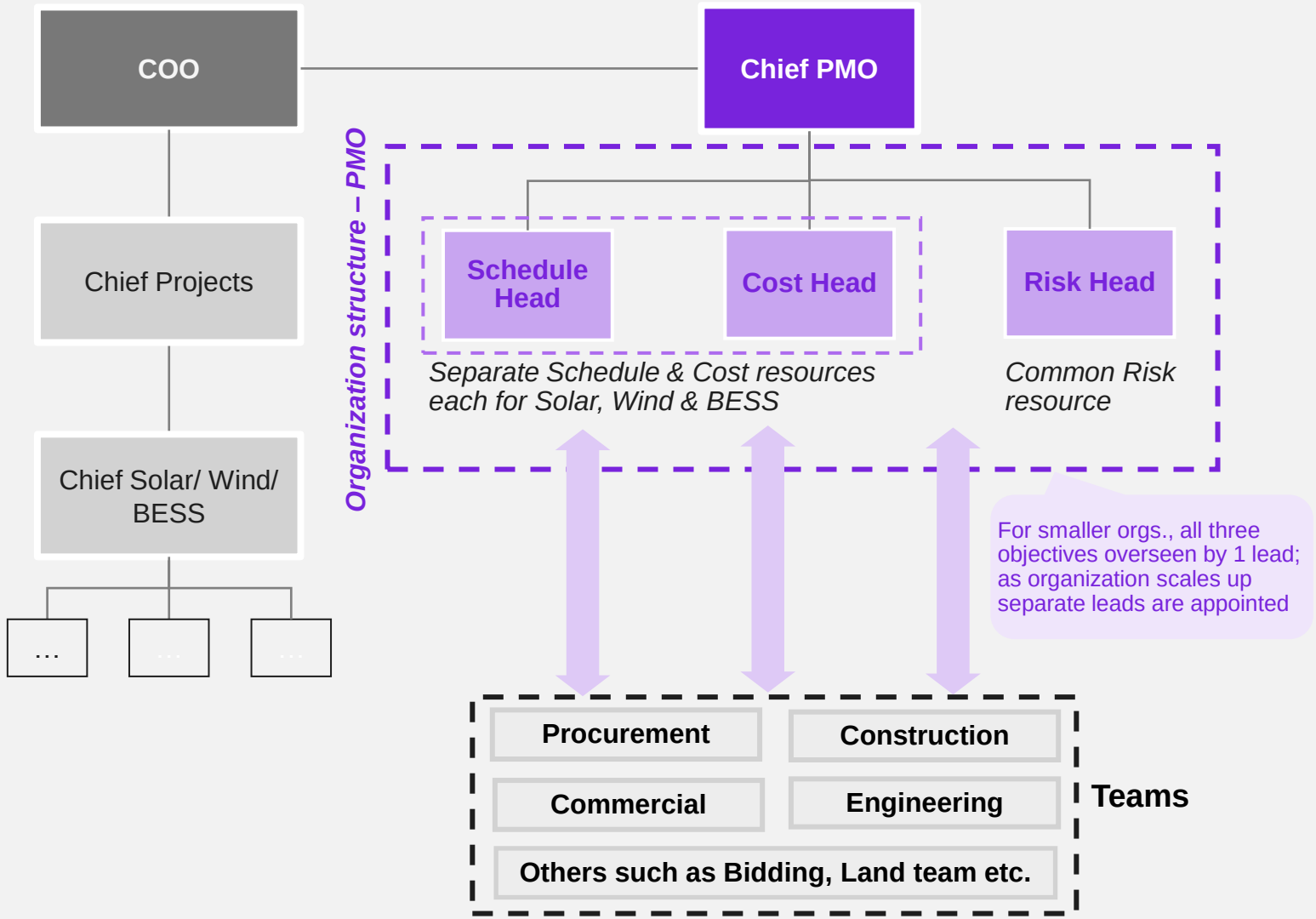


- Independent outlook on cost and schedule maintained
- Gives Business Head greater control over driving project team towards major milestones
- Greater standardization across all projects

- Increased need for co-ordination between controls team and project teams

Chosen to preserve independence of PMO Org

Organization structure for PMO needs to be in line with the business requirements



Roles & Responsibilities for PMO Team

Role	Description	Key responsibilities
Chief PMO	Head of PMO and Coordination unit	– Provides direction and policies – Develop the unit by emphasizing on knowledge transfer, coaching & feedback – Lead reviews with EDs; be accountable for metrics of Controls team – Align unit's actions with overall company strategy and accordingly guide team personnel
Schedule / Cost / Risk Heads	Owner of respective PMO functions	– Support establishing coordination between the project team and functional teams for individual projects – Track progress for different projects and consolidate for leadership – Keep account of interdependencies between different functions and modify plans as required

Operationalizing project controls: Reviews cascaded across 4 layers for effective governance (1/2)

Preliminary

As-is process

Technical head review
(Weekly/ Fortnightly)

- Inconsistent review frequency across departments
- No clearly defined agenda → discussion focus on troubleshooting

Internal review
(Weekly)

- No formal agenda
- Discussion is focused on issue resolution
- No formal documentation of MOMs for support functions

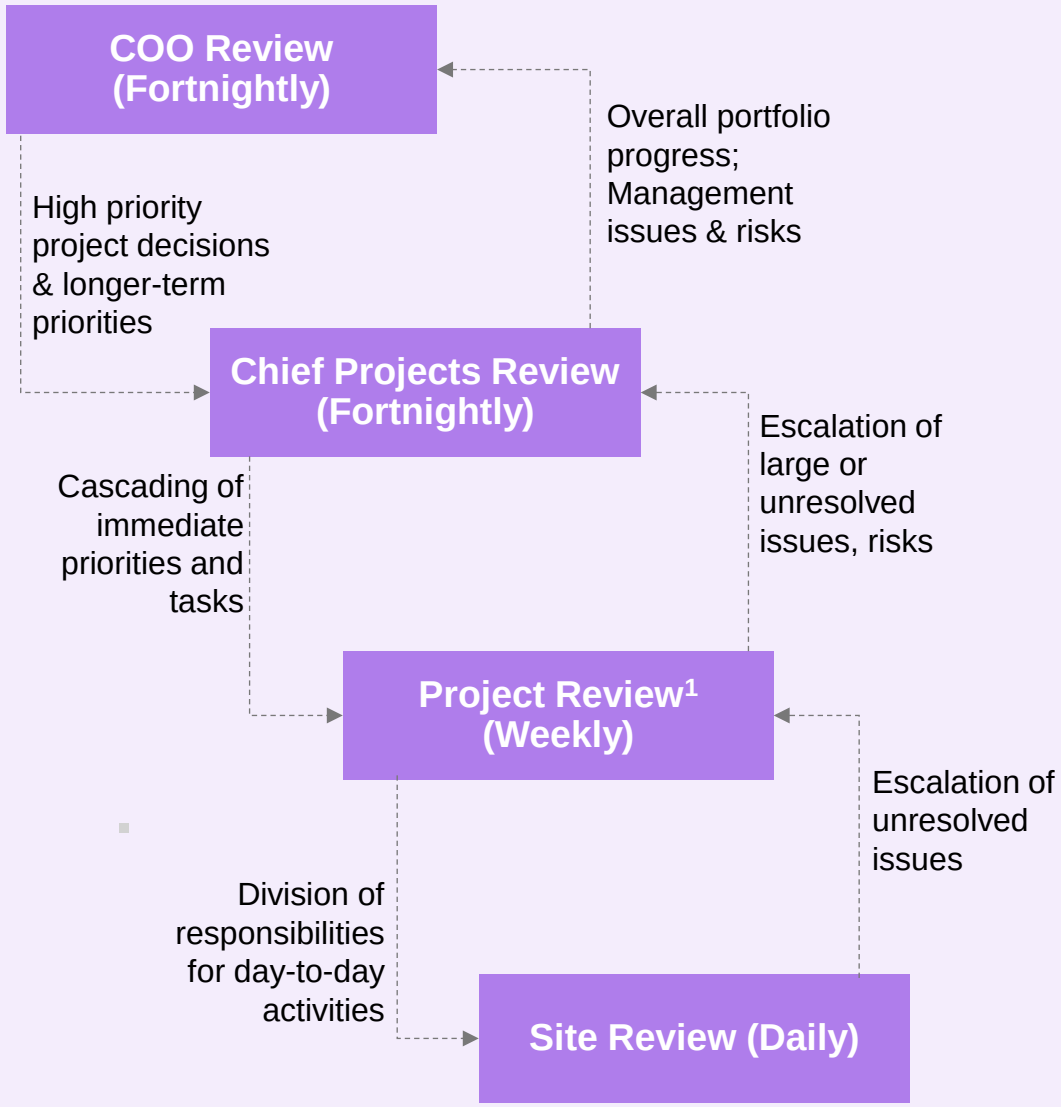
External review
(Weekly)

- Thorough review of engineering, supplies, productivity & manpower
- Reasons for delay not tracked properly; RACI not defined

Site review
(Daily)

- Daily site review and DPR update
- Site level issue resolution

Proposed process



1. External review to follow same cadence as project review & inputs from project review should flow to the external review

Operationalizing project controls requires 4 level cadence review with clear agenda items and ownership

Preliminary

Role of PMO

- Participant
- Lead Reviews
- Help drive discussion through development of policies, templates etc.

D COO REVIEW *Fortnightly*

- Provide **strategic guidance & direction**
- Review **portfolio performance**
- Discuss **select projects**, **critical risks & mitigation plan**

Chaired by	COO
Anchored by	Chief PMO
Documents	– Projects Dashboard – Final Escalated Items List

C CHIEF PROJECTS REVIEW *Fortnightly*

- Review **department (Solar/ Wind/ BESS) performance**
- Manage **department risks, mitigation plan**
- Resolve **inter-function issues**

Chaired by	Chief Projects
Anchored by	Chief Solar/ Wind/ BESS
Documents	– Fortnightly Review Doc. – Department Escalated Items List

B PROJECT REVIEW *Weekly*

- Review **project performance;** escalations from site review
- Review **updated critical path**
- Discuss all **risks and mitigation plans**

Chaired by	Chief Solar/ Wind/ BESS
Anchored by	Project Manager
Documents	– Weekly Review Doc. – Escalated Items List

A SITE REVIEW *Daily*

- Daily **action plan**
- Daily **Manpower + Contractor availability**
- Resolve **site issues**

Chaired by	Project Manager
Anchored by	Site in-charge
Documents	– Minutes of Meeting – Daily Progress Report

Governance - Meeting Charter: Site Review

Illustrative

A

Agenda: Site progress, daily plan and challenges review; debottlenecking discussions and alignment

Benefit: Quick resolution of any technical/ manpower challenges at site

Meeting Chair	Project manager	**Frequency**	Daily
Meeting Anchor	Site in-charge	**Duration**	1 hour

Objective

- Ensure on-time delivery for the tasks scheduled in immediate next 2-5 days
- Debottleneck any potential concerns to ensure minimal schedule delay

Meeting Agenda

- Align on **daily action plan**
- Discuss daily **manpower** + contractor availability
- Review **pending action** items
- **Debottleneck** for site / contractor challenges
- Discuss next **2-5 days** L3/L4 plan and highlight any expected issues

Meeting Pre-requisites / Preparation

- Collect QHSE updates from previous day
- Daily to-dos for all site members
- Open items for review, escalation, approval
- Filled DPR template linked to latest plans (if catchup plan being used)

Participants	Roles
Project manager	– Chair the meeting – Review progress on all aligned action plans and targets – Provide guidance to debottleneck issues
Site in-charge	– Anchor the meeting – Align on daily action plan – Highlight challenges and key areas of support required
Site planner	– Record key potential risks and proposed solutions highlighted; track status in subsequent review meeting
Site team	– Provide daily update on activities – Provide view on daily manpower availability and highlight any potential shortage – Prepare review templates
Special invitees (Contractor SPOC, Project coordinator, Project planner)	– Update on specific issues related leading to project delays and/ or degree of severity for any risk

Governance - Meeting Charter: Project Review

Illustrative

B

Agenda: Projects' progress, risk register review, next steps for problem solving

Benefit: Resolution of issues leading to project-wise schedule/cost deviations

Meeting Chair	Chief Solar/ Wind/ BESS	**Frequency**	Weekly
Meeting Anchor	Project manager	**Duration**	1-1.5 hours

Objective

- Track progress & discuss risks for every project and sub-modules / packages
- Debottleneck site issues & identify escalations for project head review

Meeting Agenda

- Align on action items discussed in the last meeting
- Discuss **KPIs vs targets** at a package level; ensure target adherence
- Review updated critical path; view items/ deviations in critical path across all L1 activities (e.g., design, procurement-delivery, land acquisition etc.)
- Discuss all **risks** and **mitigation plans**; review specific escalations from site reviews and discuss critical expected issue
- Approve resources/budgets needed based on thresholds
- Review of **L2/L3 look-ahead plans**; guidance on catch-up plan
- Discuss vendor performance with respect to schedule and QHSE

Meeting Pre-requisites / Preparation

- Update on guidance & action plan from previous meeting
- Collect relevant data, report KPIs & develop dashboards; recalculate critical path
- Highlight medium to high-risk items + items with increased risk from last review
- Develop mitigation plan for discussed risk items
- Prepare open items for approval, guidance, escalation; Prepare root cause analysis

Participants	Roles
Chief Solar/ Wind/ BESS	– Chair the meeting – Review project-wise overall progress and risk register – Challenge assumptions leading to deviation from targets – Provide guidance to debottleneck issues
Project manager	– Anchor the meeting – Lead overall summary for the respective projects – Escalate schedule & cost changes – Escalate high risk items & risks which increased in severity from last review for expedited problem resolution – Record key potential risks and proposed solutions highlighted; track status in subsequent review meeting
Project planner	– Support project manager in reviewing plans, actual vs planned – Integrate any key updates to the plans
Select on-site managers	– Support project manager on deep dive on any project related issues, especially on any potential issue expected in next 1 week
Commercial team	– Review the budgeted vs actual spend – Identify & highlight any budget deviations
Special invitees (Cross-functional SPOCs, PMO SPOC)	– Update on specific issues related to their function leading to project delays and/ or degree of severity for any risk

Governance - Meeting Charter: Chief Projects Review

Illustrative

C

Agenda: Review project-wise progress, critical risks, escalations and action plans

Benefit: Ensure risk resolution before COO review; joint escalation for department issues

Meeting Chair	Chief Projects	**Frequency**	Fortnightly
Meeting Anchor	Chief Solar/ Wind/ BESS	**Duration**	2-3 hours

Objective

- Debottleneck issues across departments and resolve escalated risks
- Ensure adherence to key cost, schedule and QHSE KPIs

Meeting Agenda

- Ensure cost, schedule, QHSE and configuration / PLF (as handed) adherence
- Review **dashboards; KPIs defined for department** vs targets
- **Updates from last meeting – delayed, on track, completed**
- Deep dive on **select high priority projects/ project-wise concerns**; Discuss escalations from cluster review and support required (if any)
- Manage high priority **risks, mitigation plan**
- Resolve cross-functional issues within department (e.g., design, contracting etc.)
- Identify initiatives which can have cross project impact
- **Update Commercial** on progress, risk & key metrics of their respective projects

Meeting Pre-requisites / Preparation

- Update on guidance & action plan from previous meeting
- Collect relevant data, evaluate KPIs; develop dashboard
- Highlight medium to high-risk items + items with increased risk from last review
- Develop mitigation plan for discussed risk items
- Prepare open items for approval, guidance, escalation; Prepare root cause analysis

Participants	Roles
Chief Projects	– Chair the meeting – Review projects' progress, critical risks, action plan, and support needed – Provide direction & guidance, challenge assumptions
Chief Solar/ Wind/ BESS	– Anchor the meeting – Lead overall summary of the department – Escalate schedule & cost changes, high risk items & risks which increased from last review – Provide inputs to aligned direction
PMO	– Identify any matters that may need escalation – Suggest changes to ensure alignment to review process – Keep meeting dialog action oriented, agenda focused; Seek alignment – Minute and follow up on critical points
Commercial	– Be apprised of the progress / review of their respective projects – Take note of any key risks to the project execution – Highlight & review budget deviations
Special invitees (Cross -functional SPOCs)	– Update on specific issues related to specific functions leading to project delays, risks

Governance - Meeting Charter: COO Review

Illustrative

D

Agenda: Review portfolio progress (incl. RTC),critical risks, escalations & plan

Benefit: Joint resolution with PMO and other functions of critical risks

Meeting Chair	COO	**Frequency**	Fortnightly (1 week after project head review)
Meeting Anchor	PMO lead	**Duration**	1-1.5 hours

Objective

- Review overall performance for portfolio
- Ensure co-ordination on projects
- Problem solve on cross-functional challenges
- Debottleneck critical risks/ project-wise operational concerns

Meeting Agenda

The COO session to be run for respective departments with clear slots for each

- Review **portfolio progress** on cost, schedule, QHSE, risks and action items aligned on previously vs targets; review KPIs defined for COO review
- **Updates from last meeting – delayed, on track, completed**
- **Discuss key project-wise critical issues** and the support required; **Deep dive** on **key high priority projects**
- **Challenge targets** / changes to plan
- Discuss **critical project risks** & mitigation plan
- Resolve inter-function issues
- Discuss **interventions required** & deploy special teams to resolve (if required)

Meeting Pre-requisites / Preparation

- Update on guidance & action plan from previous meeting
- Collect relevant data, report KPIs; develop dashboards/ review presentation
- Highlight critical risks and resulting capacity at risk
- Discuss mitigation plan

Participants	Roles
COO	– Chair the meeting – Review portfolio progress, critical concerns/ risks, action plan, and support needed – Provide executive direction, especially for critical risk management
Chief Projects + Chief Solar/ Wind/ BESS	– Lead overall summary for their department – Provide inputs to aligned directions
PMO lead (+functional SPOCs)	– Anchor the meeting – Collect data and generate insights; ensure alignment with departments before meeting – Prepare holistic review document – Keep meeting dialog action oriented; Seek alignment – Minute and rollout critical points
Commercial	– Be apprised of the COO review / risks for the respective projects – Resolve any open issues requiring inter-department coordination – Highlight & review major budget deviations that may impact project IRR
Special invitees (Cross-functional Leads)	– Update on specific issues related to their function leading to project delays and risks – Seek alignment to action plan / next steps

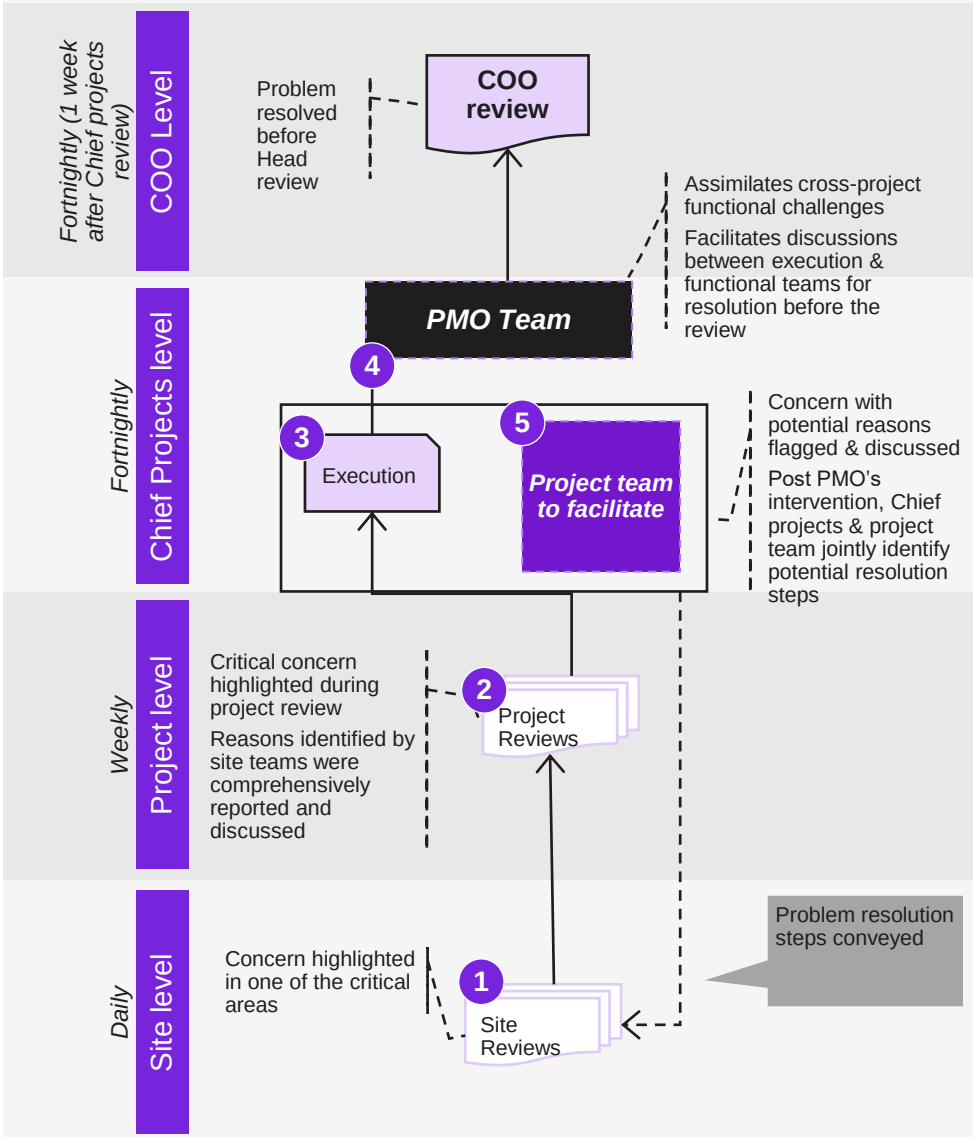
PMO to enable issue resolution basis defined escalation methodology

Escalation & Issue Resolution: Showcases flow of information, governance stages and problem resolution mechanism

Consolidated review of multiple projects

Individual project / site reviews

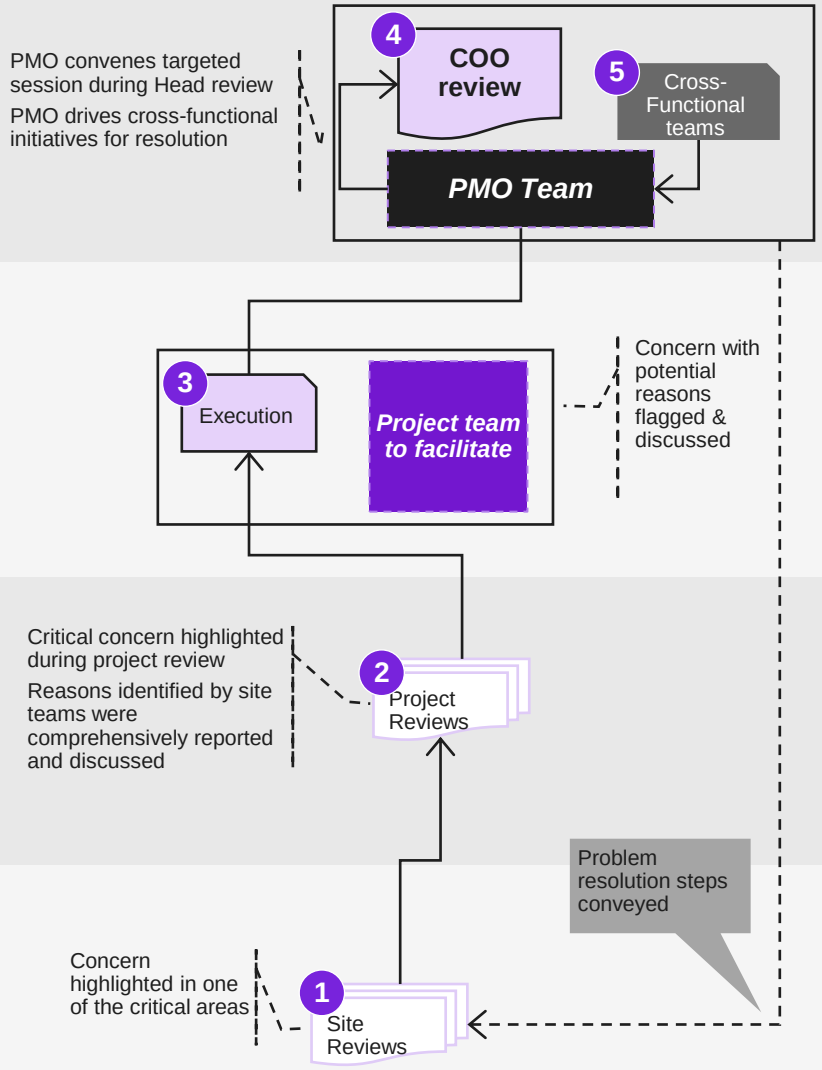
Use Case I: PMO-led problem Solving



1. SPOC: Single point of contact

Chosen as PMO is independent and seen as authority

Use Case II: COO+PMO-led problem Solving



PMO responsible for driving issue resolution at COO review level

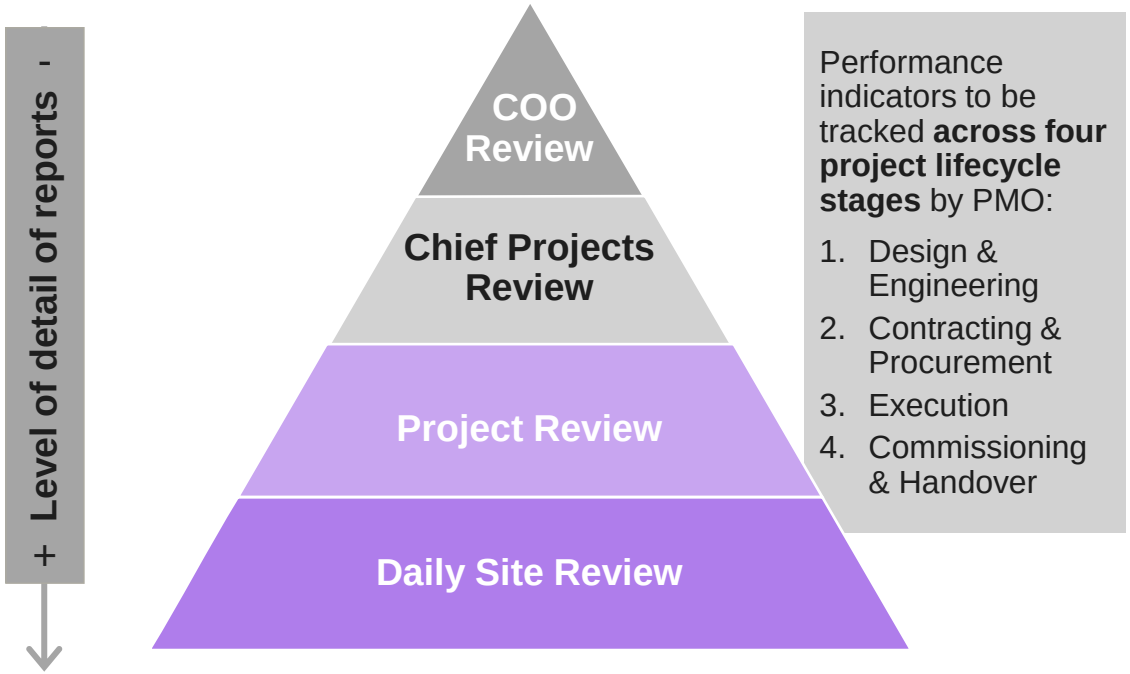
Issue resolution methodology for each governance tier

	PMO's Role	Project Team's Role
COO Review	– PMO to drive issue resolution for critical concerns through dedicated resolution meeting with Technical Head	– Project teams to attend resolution session organized by PMO with COO – Provide any data/ information inputs (if required)
Chief Projects Review	– PMO to drive issue resolution through enabling discussions/ root cause analysis workshops – Unresolvable issues to be escalated in COO Review	– Project teams to attend any resolution meetings/ workshops organized by PMO – Provide any input data for root cause analysis (if required)
Project Review	– *PMO to not intervene*, but track resolution status against the target closure date – Unresolved issues beyond target closure date to be escalated in Chief Projects review	– Project execution team to attempt resolving issues with the help of project head – In case any issue resolution requires Chief projects' intervention, concern to be escalated to Chief Projects review
Site Review	– *PMO to not intervene*	– Site execution team to attempt internally resolving issues with the help of project manager – Any unresolvable issue to be highlighted in weekly project review

E2E management of project/ functional teams expedited issue resolution resides with PMO team

Leverage lead/lag indicators across four key dimensions

Cascading of KPIs across review tiers to ensure appropriate depth and prompt action



Performance indicators to be tracked **across four project lifecycle stages** by PMO:

1. Design & Engineering
2. Contracting & Procurement
3. Execution
4. Commissioning & Handover

Relevant Project Stages

Design & Engineering → Contracting and Procurement → Execution → Commissioning & Handover

Varied level of details across different layers of governance

Dimensions of metrics

Schedule	– S-curve actual vs planned Delays in critical path	– Expected completion time – …
Cost control	– Expected cost to completion – Till date cost variance	– …
Risk management	– Risk register with probability & impact – Risks with increased severity in reviews	– Mitigation plans – Expected cost, schedule, HSE impact of risks – …
QHSE	– LTIF rate – TRIR rate	– Safety seminars conducted

Leading indicators help in predictive monitoring of processes and helps to proactively monitor projects

Lagging indicators provide performance overview till date.

Leading indicators

- **Predictive measurement**
- **Identify changes or trends**
- **Plan actions** needed avoid business impact

Lagging indicators

- **Output measurement**
- **Report past performance**
- Confirm **trends**
- Determine **project management efficacy**

Select examples

- Completion time variance
- Milestones at risk
- Completion cost variance
- Safety seminars done per site
- % rejected deliverables
- # of permits: open vs closed

Select examples

- Weekly progress variance
- % contingency cost utilized
- Resolution of NCRs
- 1st time installed quality
- Approved change order impact

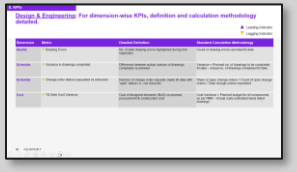
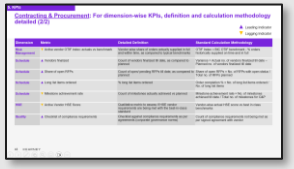
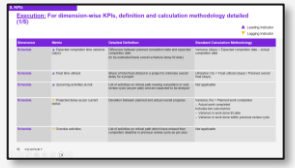
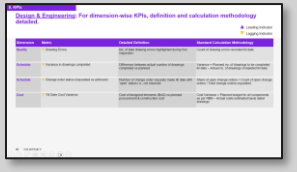
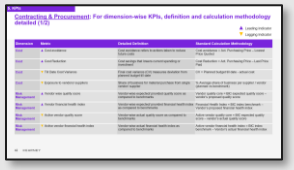
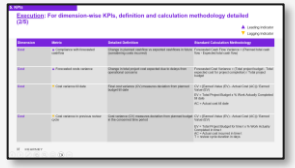
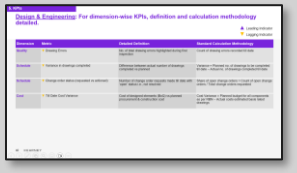
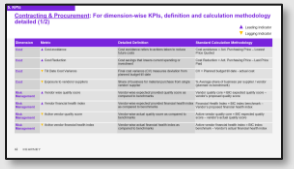
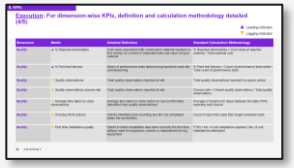
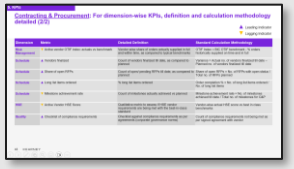
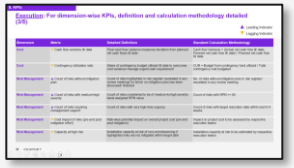
In case of deviations from cumulative budget/ timeline, escalation criteria to be leveraged for resolution.

Illustrative

Escalation Criteria

Dimension	Criteria	Escalation / discussion in meeting
Cumulated budget deviation	> 1%	Project review [Weekly PMO meeting]
	> 3%	Chief Projects review [Fortnightly PMO meeting]
	> 5%	COO review [Fortnightly PMO meeting]
Cumulated timeline deviation	8% delay for L2 activity + 1-2 weeks delay in commissioning date	Project review [Weekly PMO meeting]
	15% delay for L2 activity + 3-4 weeks delay in commissioning date	Chief Projects review [Fortnightly PMO meeting]
	25% delay for L2 activity + >4 weeks delay in commissioning date	COO review [Fortnightly PMO meeting]

For dimension-wise KPIs, definition and calculation methodology detailed

	Design & Engineering	Contracting & Procurement	Execution & Commissioning
Schedule			
Cost			
Quality & HSE			
Risk Management			

Detailed in Appendix

KPIs across different governance levels

Illustrative

Dimensions	Metrics	Chief Solar/ Wind/ BESS	Chief Projects	COO
Schedule	▲ Expected completion time variance (days)	✓	✓	✓
	▲ Float time utilized	✓		
	▲ Upcoming activities at risk	✓	✓	✓
	▼ Projected delay as per current status	✓	✓	✓
	▼ Overdue activities	✓	✓	✓
Cost	▲ Compliance with forecasted cashflow			✓
	▼ Forecasted cost variance (from RBN)			✓
	▼ Cost variance till date			✓
	▼ Cost variance in previous review cycle			✓
	▼ Cash flow variance till date			✓
	▼ Contingency utilization ratio			
Risk Management	▲ Count of risks without mitigation plan	✓	✓	✓
	▲ Count of risks with medium-high severity	✓	✓	✓
	▲ Count of risks requiring management support	✓	✓	✓
	▼ Cost impact of risks (pre and post mitigation effort)	✓	✓	✓
	▼ Capacity at high risk	✓	✓	✓
Quality	▲ % Rejected deliverables	✓		
	▲ % Field test failure	✓		
	▲ Quality Observations	✓	✓	✓
	▲ Quality observations closure rate and time	✓	✓	✓
	▼ Overdue NCR actions	✓	✓	✓
	▼ First time installation quality	✓		

▲ Leading Indicator

▼ Lagging Indicator

KPI-wise BIC performance thresholds to track Torrent's performance (1/2)

Execution

External benchmarks for select KPIs only

Dimensions	Metrics	Best in Class Performance
Schedule	▲ Expected completion time variance	3% – 6% (duration)
	▲ Float time utilized	< 60% - 70%
	▲ Upcoming activities at risk	Not applicable
	▼ Projected delay as per current status	3% - 6%
	▼ Overdue activities	Not applicable
Cost	▲ Compliance with forecasted cashflow	
	▼ Forecasted cost variance (from RBN)	0% – 2%
	▼ Cost variance till date	0% – 2%
	▼ Cost variance in previous review cycle	0% – 2%
	▼ Cash flow variance till date	
	▼ Contingency utilization ratio	
Risk Management	▲ Count of risks without mitigation plan	0
	▲ Count of risks with medium-high severity	Not applicable
	▲ Count of risks requiring management support	Not applicable
	▼ Cost impact of risks (pre and post mitigation effort)	Not applicable
Quality	▼ Capacity at high risk	0 MW
	▲ % Rejected deliverables	
	▲ % Field test failure	
	▲ Quality Observations	0
	▲ Quality observations closure rate and time	100%

▲ Leading Indicator

▼ Lagging Indicator

KPI-wise average and BIC performance thresholds to track Torrent's performance (2/2)

Execution

External benchmarks for select KPIs only

Dimensions	Metrics	Best in Class Performance
HSE	▲ Safety observations	0
	▲ Safety training man hours	
	▲ Safety Governance meetings conducted	
	▲ Safety violations (vendor)	
	▼ No. of injuries (LTI + MTC + FAC + Fatal)	
	▼ LTIF (Lost Time Injury Frequency)	0.50 – 1.0 per 200,000 manhours
	▼ TRIR (Total Recordable Injury Rate)	0.05 – 0.20 per 200,000 manhours
	▼ Near Miss Reporting Index	
	▼ Days since last incident (either of LTI, MTC, FAC, Fatal)	0
	▼ UA / UC Reporting Index	
	▼ UA/ UC percentage closure	100%
	▼ Open ATS points past due date	
	▼ Average severity Index	
	▼ No. of observations with severity level of 4 & 5	0
	▼ Overall Percentage of Good Citizens	
	▼ Number of Violators	
	▼ Number of people on site/ zone	
	▲ Training Percentage Manhours	
	▲ Induction Given to employees	100%
	▲ Employees trained in First Aid	100%
	▲ Employees trained in fire fighting	100%
	▲ Contractor Field Safety Audits Conducted	

▲ Leading Indicator

▼ Lagging Indicator

Five key data sources for review dashboard development

Templates revised/ developed to comprehensively capture information

All the data sources to be leveraged for developing dashboard across all governance tiers

1

PMO Review MoM & Action Items for Next Review Cycle

2

Executive Reports

3

Detailed Project Schedule

4

Risk Register & Risk Analysis Register

5

QHSE & NCR Register

1. Minutes of Meeting: Standard MoM to be used across departments as reference for identifying critical activities in upcoming review cycle

Minutes of Meetings

Minutes of Meeting & Action Items Template

Minutes of Meeting dated <xx>

Project	Area of Discussion	Key Discussion Points

Action Items & planned activities for next review cycle

Project	Area of Discussion	Action Item	Current Status	Target Completion Date	Original Completion Date	Owner	Comments (Reasons for any delay, deviation etc.)

Key Data Stored for Dashboard

Comprehensive notes documentation of **project-wise minutes of the meeting**

List of action items to be focused upon in upcoming review cycle basis minutes of the meeting

Assignment of planned & revised **completion date** for each identified action item

Assignment of **ownership** for each identified action items

Minutes of meeting from the **previous review meetings** for later reference

2. Executive reports: Data template for tracking progress against schedule for overall project and L1-activities (1/2)

Planned work progress by L1 activity on a daily basis

Cumulative Progress - Plan				
Sl.no	Description	Reference Weightage	Planned Progress Weightage	02-02-2025
1	Land Acquisition	10%	10%	53.08%
2	Financing	10%	10%	68.46%
3	Engineering	10%	10%	30.69%
4	Procurement			
4a	*Order placement*	5%	5%	67.06%
4b	*Order delivery*	30%	30%	75.60%
5	Execution			
5a	*Erection 33kV*	20%	20%	60.81%
5b	*Switch Yard*	5%	5%	58.52%
5c	*TL & Bay*	5%	5%	80.51%
6	Project Approvals	4%	4%	48.76%
7	Commissioning	1%	1%	15.02%
	Cumulative Plan Progress	**100%**	**100%**	**62.5%**

Actual work progress by L1 activity on a daily basis

Cumulative Progress - Actual				
Sl.no	Description	Reference Weightage	Actual Progress Weightage	02-02-2025
1	Land Acquisition	10%	4%	23.00%
2	Financing	10%	2%	9.00%
3	Engineering	10%	3%	30.25%
4	Procurement			
4a	*Order placement*	5%	1%	0.20%
4b	*Order delivery*	30%	1%	1.08%
5	Execution			
5a	*Erection 33kV*	20%	1%	1.44%
5b	*Switch Yard*	5%	1%	5.00%
5c	*TL & Bay*	5%	1%	5.00%
6	Project Approvals	4%	1%	5.50%
7	Commissioning	1%	0%	5.75%
	Cumulative Actual progress	**100%**	**16%**	**7.6%**

L1 activities (relevant for solar section execution)

Key Data in Dashboard

Cumulative planned progress summarized on a daily/ weekly basis:
- Overall
- L1-activity level

Cumulative actual progress summarized on a daily/ weekly basis:
- Overall
- L1 activity level

Catch up plan at overall project and L1 level in case of significant delay (>8% overall)

Key Information Output

Schedule s-curves at project as well as L1 activity level

Expected delay in completion date (Planned vs actual cumulative work completion till date)

Cumulative planned and actual progress during past review cycle

L1 activity-wise **progress deviation** from schedule
(Planned vs actual work completed till date for each L1 activity)

2. Executive reports: Data template for tracking progress against schedule for overall project and L1-activities (2/2)

L2/ L3 activities for land acquisition

Planned work progress by L2/ L3 activity on a daily basis

Plan for Land Acquisition							2
LA Activity	Start Date	Finish Date	Total Qty	Actual Qty (Progress)	Actual Weightage	Reference Weightage	02-02-2025
Land Identification			100		0.0%	0.0%	0.00%
Regulatoy Process Finalization			100		0.0%	0.0%	0.00%
Contract Finalization (Land)	29-10-2023	16-03-2024	100		5.0%	5.0%	5.00%
Due Diligence report (Land)	29-12-2023	16-08-2024	100		5.0%	5.0%	5.00%
Sale deed (Land)	29-03-2024	16-10-2025	100		70.0%	70.0%	38.40%
Demarcation in the presence of Project, ES & Revenue Dept. (Land)	29-10-2024	16-12-2025	100		20.0%	20.0%	4.69%
Daily Plan Total						100.0%	53.1%

Actual work progress by L2/ L3 activity on a daily basis

Actual for Land Acquisition							2
LA Activity	Start Date	Finish Date	Total Qty	Actual Qty (Progress)	Actual Progress Weightage	Reference Weightage	02-02-2025
Land Identification			100	100.0			100.0
					0.0%	0.0%	0.0%
Regulatoy Process Finalization			100	100.0			100.0
					0.0%	0.0%	0.0%
Contract Finalization (Land)			100	70.0			50.0
					3.5%	5.0%	2.5%
Due Diligence report (Land)			100	70.0			50.0
					3.5%	5.0%	2.5%
Sale deed (Land)			100	40.0			20.0
					28.0%	70.0%	14.0%
Demarcation in the presence of Project, ES & Revenue Dept. (Land)			100	46.0			20.0
					9.2%	20.0%	4.0%
Daily Actual Total					44.2%	100.0%	23.0%

Key Data in Dashboard

Planned progress summarized on a daily/ weekly basis:
– L2/ L3 activity level

Cumulative actual progress summarized on a daily/ weekly basis:
– L2/ L3 activity level

Catch up plan at L2/ L3 level in case of significant delay (>8% overall)

Key Information Output

Sum of planned progress summarized on a daily/ weekly basis at L1 activity level

Sum of actual progress summarized on a daily/ weekly basis at L1 activity level

Key L2/ L3 activities causing deviation from planned progress at L1 activity level

Key L2/ L3 activities to focus on for **catch-up plan**

3. Detailed project schedule: The project schedule template stores data on baseline, expected and actual schedule till L7/ L8 level

Detailed project schedule template

Detailed list of activities

Critical path activities

Planned start & completion dates

WBS	Task Name	Critical	Duration	Start	Finish	Predecessors
1	**Solar Project 50MW**	**Yes**	**286 days**	**01-10-2024**	**29-08-2025**	
1.1	Project Start	Yes	1 day	01-10-2024	01-10-2024	
1.2	**Statutory Approvals**	**No**	**165 days**	**03-10-2024**	**12-04-2025**	
1.2.1	Form V	No	45 days	10-10-2024	30-11-2024	36
1.2.2	BOCW Certificate	No	45 days	10-10-2024	30-11-2024	36
1.2.3	CLRA (contract labour regulation and abolition) Certificate	No	30 days	10-10-2024	13-11-2024	36
1.2.4	Village NOC	No	100 days	18-12-2024	12-04-2025	17FF
1.2.5	EAR Insurance Policy	No	45 days	10-10-2024	30-11-2024	36
1.2.6	GST registration of Site	No	45 days	03-10-2024	23-11-2024	17SS
1.2.7	Worker Compensation Policy	No	45 days	10-10-2024	30-11-2024	36
1.2.8	ESIC (employee state insurance corporation) Certificate	No	45 days	10-10-2024	30-11-2024	36
1.2.9	EPF Certificate	No	45 days	10-10-2024	30-11-2024	36
1.2.10	HIRA (Hazard identification and risk assesment) Certificate	No	45 days	10-10-2024	30-11-2024	36
1.2.11	JSA- Job safety analysis Certificate	No	45 days	10-10-2024	30-11-2024	36
1.3	**Land Acquisition**	**Yes**	**182 days**	**02-10-2024**	**01-05-2025**	
1.3.1	TSR (Land)	Yes	30 days	02-10-2024	05-11-2024	2
1.3.2	Lease/ Sale Deed (Land)	Yes	165 days	03-10-2024	12-04-2025	16SS+1 day
1.3.3	NA Order (Land)	No	165 days	07-10-2024	16-04-2025	17SS+3 days
1.3.4	Demarcation in the presence of Project, ES and ReD (Land)	Yes	177 days	07-10-2024	30-04-2025	17SS+3 days
1.3.5	Block -1 Land handover to EPC	No	1 day	19-10-2024	19-10-2024	19SS,188SS
1.3.6	Block -2 Land handover to EPC	No	1 day	19-10-2024	19-10-2024	19SS,188SS
1.3.7	Block -3 Land handover to EPC	No	1 day	19-10-2024	19-10-2024	19SS,188SS
1.3.8	Block -4 Land handover to EPC	Yes	1 day	01-05-2025	01-05-2025	19,18
1.3.9	Block -5 Land handover to EPC	No	1 day	19-10-2024	19-10-2024	19SS,188SS
1.3.10	Block -6 Land handover to EPC	No	1 day	19-10-2024	19-10-2024	19SS,188SS
1.4	**Design/ Engineering/ Procurement**	**No**	**197 days**	**02-10-2024**	**19-05-2025**	
1.4.1	**Owner's Engineer & Third Party Inspector Finalization**	**No**	**2 days**	**02-10-2024**	**03-10-2024**	
1.4.1.1	OE (RFQ)	No	1 day	02-10-2024	02-10-2024	2
1.4.1.2	OE (PO)	No	1 day	03-10-2024	03-10-2024	28
1.4.1.3	TPI (RFQ)	No	1 day	02-10-2024	02-10-2024	2
1.4.1.4	TPI (PO)	No	1 day	03-10-2024	03-10-2024	30
1.4.2	**EPC Vendor Finalization**	**No**	**7 days**	**02-10-2024**	**09-10-2024**	

Key Data Stored for Dashboard

Critical path activities for close monitoring (updated on a weekly basis by the planner)

Expected start and finish dates as of date for all the activities listed

Baseline (planned) start and finish dates for all the activities listed

Actual start and finish dates for all the activities listed

Key Information Output

Upcoming critical activities: List of critical activities planned to be completed in upcoming review cycle

Overdue activities: List of critical activities planned to be completed in past review cycle but have been delayed

Action plan for the upcoming review cycle i.e., action items to be initiated in next cycle

4. Risk Register: Standardized risk register format to track project related risks

Risk Register

Stage 1: Risk Input Register Template

Purpose of this Risk input register is to capture all risk events and perfrom initial qualitative ranking
To be populated by all stakeholders

RiskID	Project	Project Component	Listing Date	Risk Group	Risk Issue	Risk Impact	Risk Urgency	Mitigation Action	Action Owner
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									

Risk Cost Analysis Register

Stage 2: Risk Cost Analysis Template

Purpose of this Risk Analysis Register is to analyse all high value risks events on quantitative basis and

Input this part of register by copy and paste method from Risk input register

RiskID	Project	Project Component	Listing Date / Update Date	Risk Group	Risk Issue	Original Risk Impact (Risk Register)	New Risk cost post mitigation (INR) (Total Risk Cost * New Probability)	Net benefit of implementing action item (INR)
1							0	0
2							0	0
3							0	0
4							0	0
5							0	0
6							0	0
7							0	0
8							0	0
9							0	0
10							0	0
11							0	0
12							0	0
13							0	0
14							0	0
15							0	0

Key Data Stored for Dashboard

Risk issue, description and group (i.e., the associated L1 activity being impacted)

Risk severity considering impact on key project elements

Risk-wise **mitigation steps and responsible owner** for driving resolution

Key Information Output

Risk urgency basis the target resolution date i.e., time left to mitigate (in weeks)

Risk-wise urgency grading defined as:

- **Medium urgency:** target beyond 8 weeks
- **High urgency;** target date within 4 – 8 weeks
- **Very high urgency**: target date within 0 – 4 weeks
- **Risk actualized:** 4 weeks since target date passed

5. QHSE & NCR Register: Integrated QHSE & NCR dashboard for comprehensive safety & compliance overview

QHSE Register

QHSE Parameters Overview

HSE

Manhours Overview

S. No.	Incident Type	# Value in Last week	# Value Till Date	# Value in Last Review
1	Manhours			

EHS Lagging indicators

Overall Summary

S. No.	Incident Type	# Value in Last week	# Value Till Date	# Value in Last Review
1	Near Miss Cases			
2	Medical Treatment Case			
3	RWC			
4	First Aid Cases			
5	No of Lost Time Incidents - LTI > 48 Hrs			
6	No of Fatalities			
	Total			

Present values

S. No.	Category	Torrent	Contractors	Total
1	Near Miss Cases			
2	Medical Treatment Case			
3	RWC			
4	First Aid Cases			
5	No of Lost Time Incidents - LTI > 48 Hrs			
6	No of Fatalities			
	Total			

Non-Conformity Report

Non Conformity Report

HSE

S. No.	NCR Description	Status	Target Completion Date	Ownership
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Quality

S. No.	NCR Description	Status	Target Completion Date	Ownership
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Key Data Stored for Dashboard

Key QHSE Metrics such as **Lost Time Injury Frequency, Total Recordable Incident rate, Near misses & fatalities**

Health & Safety overview via **Manhours worked, first-aid cases, Safe hours, Safety observations**

Safety training man-hours, Employees trained in first-aid, firefighting

Number of non-conformity observations alongside status & target completion dates

Key Information Output

Safety review of the project site through lost man-hours & safety incidents

Safety readiness on the site through tracking of trainings conducted and employee participation

Compliance, closure rates & effectiveness of corrective measures for NC observations

Review dashboards along with relevant KPIs visualized across different governance levels were developed for TPL

Illustrative

1 COO Review

- Status of Projects
- Capacity Roadmap
- Schedule & Cost Variance
- Capacity at High Risk
- Total QHSE Observations

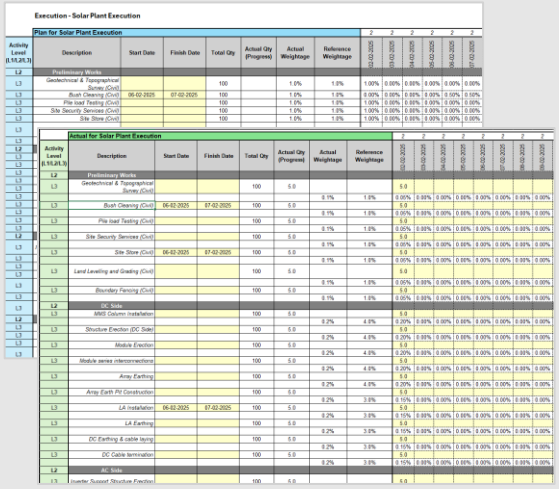
2 Chief Projects Review

- Department overview
- Project-level deep dive
- Schedule & Cost s-curves
- Total LTIF (Lost Time Injury Freq.)
- Department-level risks

3 Project Review

- L1 Activity progress
- Critical Path activities
- Cost Overview
- QHSE performance
- Project-level risks
- Issue Log

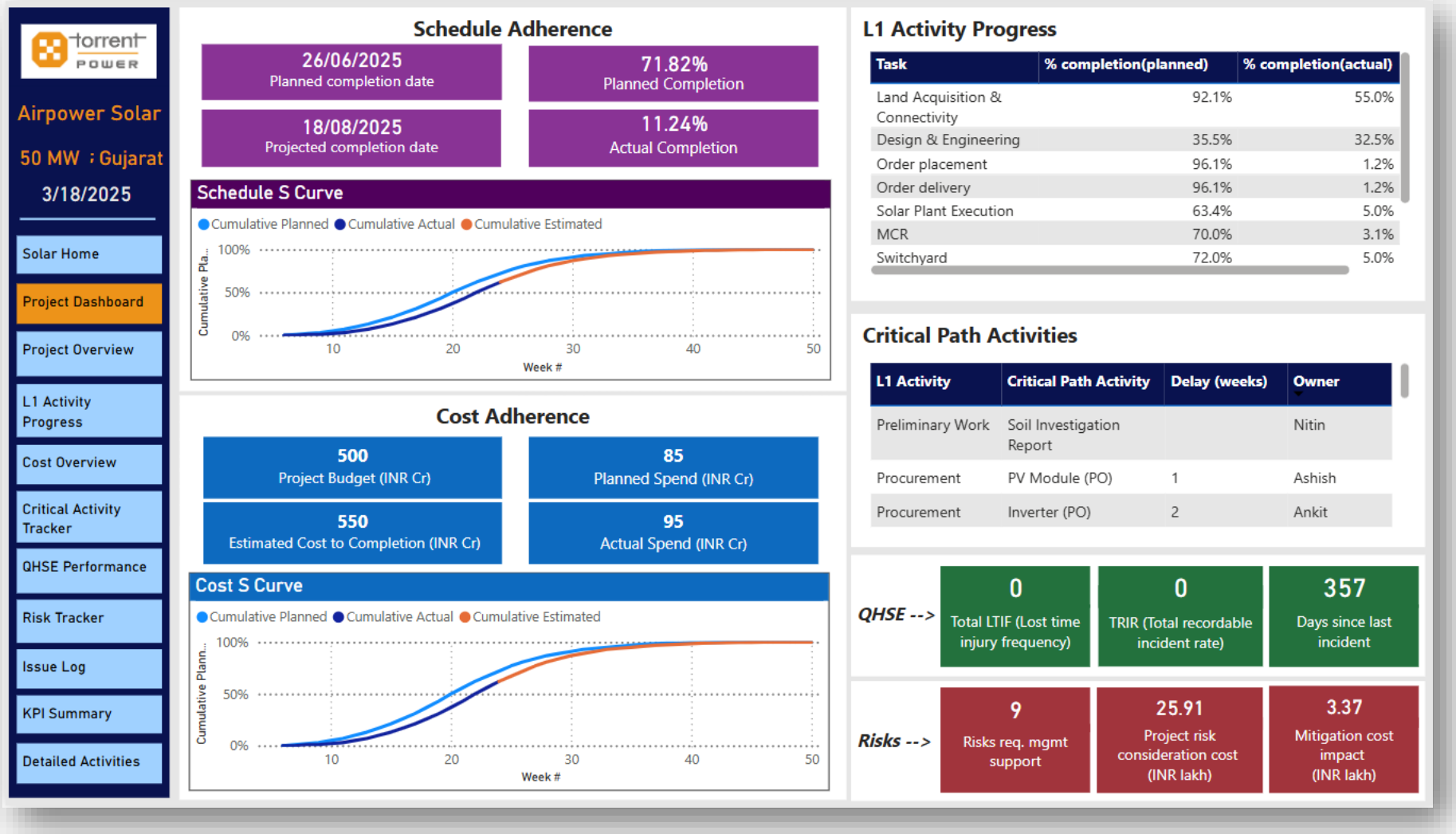
4 Site Review



- Daily plan & actual progress
- Resource & manpower availability
- QHSE tracker
- Escalated Items List
- Issue Log

Project summary page with a view on Schedule, Cost, QHSE & Risk

Illustrative



Thank you

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Execution: For dimension-wise KPIs, definition and calculation methodology detailed (1/8)

▲ Leading Indicator

▼ Lagging Indicator

Dimension	Metric	Detailed Definition	Standard Calculation Methodology
Schedule	▲ Expected completion time variance (days)	Difference between planned completion date and expected completion date (to be estimated basis overall schedule delay till date)	Variance (days) = Expected completion date – Actual completion date
Schedule	▲ Float time utilized	Share of total float utilized in a project to minimize overall delay for a project	Utilization (%) = Float utilized (days) / Planned overall float (days)
Schedule	▲ Upcoming activities at risk	List of activities on critical path nearing completion in next review cycle (as per plan) and are expected to be delayed	*Not applicable*
Schedule	▼ Projected delay as per current status	Deviation between planned and actual overall progress	Variance (%) = Planned work completion – Actual work completed Includes two sub-metrics: – Variance in work done till date – Variance in work done within previous review cycle
Schedule	▼ Overdue activities	List of activities on critical path which have missed their completion deadline in previous review cycle as per plan	*Not applicable*

Execution: For dimension-wise KPIs, definition and calculation methodology detailed (2/8)

▲ Leading Indicator

▼ Lagging Indicator

Dimension	Metric	Detailed Definition	Standard Calculation Methodology
Cost	▲ Compliance with forecasted cashflow	Change in planned cashflow vs expected cashflows in future (considering costs incurred)	Forecasted Cash Flow Variance = (Planned total cash flow - Expected total cash flow)
Cost	▲ Forecasted costs variance	Change in total project cost expected due to delays from operational concerns	Forecasted Cost Variance = (Total project budget - Total expected cost for project completion) / Total project budget
Cost	▼ Cost variance till date	Final cost variance (CV) measures deviation from planned budget till date	CV = [Earned Value (EV) - Actual Cost (AC)] / Earned Value (EV) EV = Total Project Budget x % Work Actually Completed till date AC = Actual cost till date
Cost	▼ Cost variance in previous review cycle	Cost variance (CV) measures deviation from planned budget in the concerned time period	CV = [Earned Value (EV) - Actual Cost (AC)] / Earned Value (EV) EV = Total Project Budget for time t x % Work Actually Completed in time t AC = Actual cost incurred in time t T = review cycle duration in days

Execution: For dimension-wise KPIs, definition and calculation methodology detailed (3/8)

▲ Leading Indicator

▼ Lagging Indicator

Dimension	Metric	Detailed Definition	Standard Calculation Methodology
Cost	▼ Cash flow variance till date	Final cash flow variance measures deviation from planned net cash flows till date	Cash flow Variance = (Actual net cash flow till date- Planned net cash flow till date) / Planned net cash flow till date
Cost	▼ Contingency utilization ratio	Share of contingency budget utilized till date to overcome cost variance/ manage urgent cash requirement	CUR = Budget from contingency fund utilized / Total contingency cost budgeted
Risk Management	▲ Count of risks without mitigation plan	Count of risks highlighted in risk register/ escalated in any review meetings for which no mitigation plan has been discussed/ finalized	No. of risks without mitigation plan in risk register/ escalated in any review meeting
Risk Management	▲ Count of risks with medium-high severity	Count of risks considered to be of medium-to-high severity basis assigned RPN value	Count of risks with RPN >= 60
Risk Management	▲ Count of risks requiring management support	Count of risks with very high time urgency	Count of risks with target resolution date within next 0-4 weeks
Risk Management	▼ Cost impact of risks (pre and post mitigation effort)	Risk-wise potential impact on overall project cost (pre and post mitigation)	Impact on project cost to be assessed by respective execution teams
Risk Management	▼ Capacity at high risk	Installation capacity at risk of non-commissioning if highlighted risks are not mitigated within target date	Installation capacity at risk to be estimated by respective execution teams

Execution: For dimension-wise KPIs, definition and calculation methodology detailed (4/8)

▲ Leading Indicator

▼ Lagging Indicator

Dimension	Metric	Detailed Definition	Standard Calculation Methodology
Quality	▲ % Rejected deliverables	Cost value associated with construction material rejected on first receipt, as a share of expected total cost value of input material	% Rejected deliverables = Cost value pf rejected material / Total material cost
Quality	▲ % Field test failures	Share of performance tests failed during handover post site commissioning	% Field test failures = Count of performance tests failed / Total count of performance tests
Quality	▼ Quality observations	Total quality observations reported at site	Total quality observations reported in a given period
Quality	▼ Quality observations closure rate	Total quality observations reported at site	Closure rate = Closed quality observations / Total quality observations
Quality	▼ Average time taken to close observations	Average time taken to close action on non-conformities (identified from quality observations)	Average of duration (in days) between the date of NC reporting and closure
Quality	▼ Overdue NCR actions	CAPAs identified post recording any NC not completed within the set timeline	Count of open NCs past their target resolution date
Quality	▼ First time installation quality	Extent to which installation was done correctly the first time without need for inspection, rework or replacement for big equipment	FTIQ = No. of unit installation rejected / No. of unit installations attempted

Execution: For dimension-wise KPIs, definition and calculation methodology detailed (5/8)

▲ Leading Indicator

▼ Lagging Indicator

Dimension	Metric	Detailed Definition	Standard Calculation Methodology
HSE	▼ Safety observations	Count of observations with safety violations during inspections	Count of safety observations till date
HSE	▼ Safety training manhours	Number of training manhours spent on safety training	Number of people trained x Number of training hours
HSE	▼ Safety governance meetings conducted	Site safety governance body meetings conducted as part of CFSA audit, ideally on a weekly basis	No. of safety governance meetings conducted in a given period
HSE	▼ Safety violations	Safety violations (incl. contractor violations) reported in Action Tracking System	No. of safety violations in a given period
HSE	▼ Number of injuries (LTI + MTC + FAC + Fatal)	Count of injuries resulting in any one or more of (a) Lost time (b) Medical treatment (c) FAC (d) Fatality	Count of LTI, MTC, FAC and Fatal incidents till date
HSE	▼ Lost Time Injury Frequency Rate (LTIFR)	Lost Time Injury refers to incidents that result in a disability or an employee missing work due to an injury	LTIF per 100 worker years = (Lost Time Injuries / Total number of work hours in period) x 200,000
HSE	▼ Total Injury Rate (TIR)	Number of recordable injuries per 100 full-time workers during a one-year period	TRIR = (Number of Incidents / Total number of work hours in a year) x 200,000

Execution: For dimension-wise KPIs, definition and calculation methodology detailed (6/8)

▲ Leading Indicator

▼ Lagging Indicator

Dimension	Metric	Detailed Definition	Standard Calculation Methodology
HSE	▼ Near miss reporting index	Count of events that could have potentially lead to loss, injury, or damage, but didn't.	No. of near miss events still date
HSE	▼ Days since last incident	Count of days since last incident resulting in a disability or an employee missing work due to an injury	No. of days since last incident (either of LTI/ MTC/FAC/Fatality)
HSE	▼ Unsafe Act (UA) / Unsafe Conditions (UC) reporting index	Count of Unsafe Acts / Unsafe Conditions reported at site	Unsafe Acts/ Unsafe Conditions per million manhours worked
HSE	▼ Unsafe Act (UA) / Unsafe Conditions (UC) percentage closure	Total UA/ UC reported at site	Closure rate = Closed UA/ UC observations / Total UA/ UC observations
HSE	▼ Open ATS points past due date	EHS observations recorded in Gensuite which are open past pre-decided closure date	No. of EHS observations open past assigned closure date
HSE	▼ Average severity index	Indicative metric to identify the severity of safety violations tracked as part of CFSA data	Average value of severity levels identified for all safety observations recorded till date
HSE	▼ No, of observations with severity level of 4 & 5	No. of safety observations with severity level of 4 (serious hazard danger that can cause injury) and 5 (imminent danger that has fatality potential)	Count of safety observations with severity level 4 & 5 recorded till date

Execution: For dimension-wise KPIs, definition and calculation methodology detailed (7/8)

▲ Leading Indicator

▼ Lagging Indicator

Dimension	Metric	Detailed Definition	Standard Calculation Methodology
HSE	▼ Overall percentage of good citizens	Number of contractor personnel working in a good position while wearing all necessary PPE and using proper tools in the right manner	Number of good citizens by number of total contractor personnel * 100
HSE	▼ No. of violators	Count of employees contributing to safety violations	No. of employees who were engaged in safety violations, against totals manpower at site
HSE	▼ Number of people on site/ zone	Site-wise total manpower strength	No. of employees at the construction site
HSE	▲ Training percentage manhours	No. of safety training manhours	No. of safety training manhours per million manhours worked
HSE	▲ Induction given to employees	No of new employees given initial site information (layout, safety protocol, work profile, risks, etc.) by site EHS resource	NA
HSE	▲ Employees trained in first aid	No. of employees trained in first aid training at the site	Count of site employees trained in first aid till date
HSE	▲ Employees trained in firefighting	No. of employees trained in fire fighting practices at the site	Count of site employees trained in fire fighting till date

Execution: For dimension-wise KPIs, definition and calculation methodology detailed (8/8)

▲ Leading Indicator

▼ Lagging Indicator

Dimension	Metric	Detailed Definition	Standard Calculation Methodology
HSE	▼ Contractor field safety audits conducted	No. of site safety audits conducted for contractors in a given period	NA
HSE	▼ Toolbox talks conducted	Number of informal safety meetings conducted focusing on safety topics (e.g. hazards & safe work practices).	Count of informal safety meetings conducted till date

Design & Engineering: For dimension-wise KPIs, definition and calculation methodology detailed.

▲ Leading Indicator

▼ Lagging Indicator

Dimension	Metric	Detailed Definition	Standard Calculation Methodology
Quality	▼ Drawing Errors	No. of total drawing errors highlighted during first inspection	Count of drawing errors recorded till date
Schedule	▼ Variance in drawings completed	Difference between actual number of drawings completed vs planned	Variance = Planned no. of drawings to be completed till date – Actual no. of drawings completed till date
Schedule	▼ Change order status (requested vs actioned)	Number of change order requests made till date with 'open' status i.e., not resolved	Share of open change orders = Count of open change orders / Total change orders requested
Cost	▼ Till Date Cost Variance	Cost of designed elements (BoQ) vs planned procurement & construction cost	Cost Variance = Planned budget for all components as per RBN – Actual costs estimated basis latest drawings

Contracting & Procurement: For dimension-wise KPIs, definition and calculation methodology detailed (1/2)

▲ Leading Indicator

▼ Lagging Indicator

Dimension	Metric	Detailed Definition	Standard Calculation Methodology
Cost	▲ Cost avoidance	Cost avoidance refers to actions taken to reduce future costs	Cost avoidance = Act. Purchasing Price – Lowest Price Quoted
Cost	▲ Cost Reduction	Cost savings that lowers current spending or investment	Cost Reduction = Act. Purchasing Price – Last Price Paid
Cost	▼ Till Date Cost Variance	Final cost variance (CV) measures deviation from planned budget till date	CV = Planned budget till date - actual cost
Cost	▼ Exposure to vendors/ suppliers	Share of business for material purchase from single vendor/ supplier	% Average share of business per supplier / vendor (planned vs benchmark)
Risk Management	▲ Vendor wise quality score	Vendor-wise expected/ provided quality score as compared to benchmarks	Vendor quality core = BIC expected quality score – vendor's proposed quality score
Risk Management	▲ Vendor financial health index	Vendor-wise expected/ provided financial health index as compared to benchmarks	Financial Health Index = BIC index benchmark – Vendor's proposed financial health index
Risk Management	▼ Active vendor quality score	Vendor-wise actual quality score as compared to benchmarks	Active vendor quality core = BIC expected quality score – vendor's actual quality score
Risk Management	▼ Active vendor financial health index	Vendor-wise actual financial health index as compared to benchmarks	Active vendor financial health index = BIC index benchmark – Vendor's actual financial health index

Contracting & Procurement: For dimension-wise KPIs, definition and calculation methodology detailed (2/2)

▲ Leading Indicator

▼ Lagging Indicator

Dimension	Metric	Detailed Definition	Standard Calculation Methodology
Risk Management	▼ Active vendor OTIF index: actuals vs benchmark	Vendor-wise share of orders actually supplied in full and within time, as compared to typical benchmarks	OTIF Index = BIC OTIF benchmark - % orders historically supplied on time and in full
Schedule	▲ Vendors finalized	Count of vendors finalized till date, as compared to planned	Variance = Actual no. of vendors finalized till date – Planned no. of vendors finalized till date
Schedule	▲ Share of open RFPs	Count of open/ pending RFPs till date, as compared to planned	Share of open RFPs = No. of RFPs with open status / Total no. of RFPs planned
Schedule	▲ Long list items ordered	% long list items ordered	Order completion % = No. of long list items ordered / No. of long list items
Schedule	▼ Milestone achievement rate	Count of milestones actually achieved vs planned	Milestone achievement rate = No. of milestones achieved till date / Total no. of milestones for C&P
HSE	▼ Active Vendor HSE Score	Qualitative metric to assess if HSE vendor requirements are being met with the best-in-class standard	Vendor-wise actual HSE score vs best in class benchmarks
Quality	▲ Checklist of compliance requirements	Checklist against compliance requirements as per agreements (corporate governance norms)	Count of compliance requirements not being met as per signed agreement with vendor

Commissioning: For dimension-wise KPIs, definition and calculation methodology detailed.

▲ Leading Indicator
▼ Lagging Indicator

Dimension	Metric	Detailed Definition	Standard Calculation Methodology
Quality	▼ Performance Test Failure	Share of performance tests failed during handover post site commissioning	Performance Test Failure = No. of performance tests failed / No. of performance tests conducted