CEDD NEC Playbook (Financial Management)

Version 1.0

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Table of Contents

Preface 1
Introduction 2
Purpose and scope of this playbook 2
Structure of this playbook 3
Disclaimer 4
Acronyms 5

1 Financial Control 6
1.1 Overview 6
1.2 Good practices and practical know-how 7
1.2.1 Dual roles of project owner and facilitator 7
1.2.2 Active participation in meetings 8
1.2.3 Management of NEC Health Check Key Performance Indicators 9
1.2.4 Resolving and avoiding disputes 11
1.3 Topical issues 12
1.3.1 Issue no. 1 – How to enhance the effectiveness of meetings on financial control? 12
1.3.2 Issue no. 2 – How could the NEC Health Check KPIs help CEDD perform a facilitator role? 14

2 Payment 16
2.1 Overview 16
2.2 Good practices and practical know-how 17
2.2.1 Dual roles of project owner and facilitator 17
2.2.2 Forecast payment assessment 18
2.2.3 Finalisation of Defined Cost 18

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Table of Contents

2.3 Topical issues 20
2.3.1 Issue no. 1 – Defined Cost 20
2.3.2 Issue no. 2 – Supporting documents 23
2.3.3 Issue no. 3 – Disallowed Cost 24
2.3.4 Issue no. 4 – Wastage and idling control 27
2.3.5 Issue no. 5 – Disposal of unused Plant and Materials 28
2.3.6 Issue no. 6 – Subcontracting 29

3 Financial Matters of Compensation Events 30
3.1 Overview 30
3.2 Good practices and practical know-how 30
3.2.1 Dual roles of project owner and facilitator 30
3.2.2 Pre-CE stage 31
3.2.3 CE stage 33
3.3 Topical issues 38
3.3.1 Issue no. 1 – *PM's* assumptions 38
3.3.2 Issue no. 2 – People cost 40
3.3.3 Issue no. 3 – *Contractor's* risk allowances 40
3.3.4 Issue no. 4 – Use of rates and lump sums 41

Table of Contents

4 Cost-effectiveness Enhancement and Financial Incentivisation 43
4.1 Overview 43
4.2 Good practices and practical know-how 44
4.2.1 Dual roles of project owner and facilitator 44
4.2.2 Cost Savings Design 45
4.2.3 Clause 16.1 *Contractor's* proposals 46
4.2.4 Pain/gain share under target contracts 46
4.3 Topical issues 47
4.3.1 Issue no. 1 – CSD involving a change to the works with its detailed design still subject to development for construction 47
4.3.2 Issue no. 2 – Adjustment/non-adjustment for the Prices following acceptance of the *Contractor's* proposals under clause 16.1 48
4.3.3 Issue no. 3 – *Contractor's* submission and *PM's* forecast of final target and PWDD 49
4.3.4 Issue no. 4 – *PM's* interim share assessment 51

Appendix A – Suggested Agenda of Monthly Financial Meeting (for ECC Option C)

Preface

I am pleased to introduce the CEDD NEC Playbook (Financial Management), developed to provide practical guidance on managing financial matters under NEC contracts.

Financial management is fundamental to the successful delivery of public works. Under the NEC framework, it is not only about cost control, but also about ensuring a fair and reasonable financial entitlement to the *Contractor*, while maintaining a justifiable, accountable and value-for-money financial commitment by CEDD, with the potential for minimising disputes. This includes consistent administration of payments, disciplined management of compensation events, and proactive pursuit of enhanced cost-effectiveness supported by financial incentivisation, all within a collaborative working environment.

This playbook sets out good practices and actionable guidance across key areas of financial control, payment, compensation events and cost-effectiveness. It is intended to support CEDD officers in performing their dual role as both project owner and facilitator in financial management under NEC contracts.

Looking ahead, our ambition is to embed these practices and guidance across all NEC contracts – so that financial management not only safeguards public resources and upholds fairness and reasonableness, but also drives trust, value and resilience, contributing to a sustainable and forward-looking infrastructure legacy for Hong Kong.

Video of DCED's Messages

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Introduction

Purpose and scope of this playbook

This CEDD NEC Playbook (Financial Management) ("this playbook") extends the principles of collaboration, transparency and structured processes to the financial management of NEC contracts.

The purpose of this playbook is to provide clear and practical guidance to CEDD (Civil Engineering and Development Department) officers performing the role of the *Client* to:

- administer financial matters under NEC contracts effectively and consistently;
- achieve justifiable and accountable financial commitment by CEDD;
- ensure fair and reasonable financial entitlement to contractors; and
- uphold the collaborative ethos of NEC while achieving value for money.

This playbook should neither be treated as a mandatory handbook nor a substitute for the Development Bureau (DEVB)'s NEC Practice Notes for Public Works Projects in Hong Kong, but rather to set out the principles, processes and good practices that underpin sound financial governance, supporting:

- transparent and auditable financial administration;
- proactive management of costs, risks and changes; and
- cost efficiency throughout the project lifecycle.

This playbook focuses on the administration of NEC Engineering and Construction Contract Hong Kong edition (ECC/HK) main Options A to D and is based on:

- the ECC/HK July 2023 version
- DEVB's standard amendments to ECC/HK as included in the *additional conditions of contract*

This playbook is intended to be a live document which remains current, dynamic, evolving and effective.

This playbook does not intend to provide any legal opinion/interpretation of the contract.

Video of Introduction and Compensation Event

Video of CE/HP's Highlights

Structure of this playbook

This playbook is structured in four chapters, with each addressing a critical component of financial management:

1) **Financial Control**

   - Highlighting how CEDD, performing the role of the *Client* and a facilitating role in parallel, could enhance financial control during the construction stage of NEC contracts, and support the amicable resolution of disputes without escalating to dispute resolution proceedings, or even avoiding disputes.

2) **Payments**

   - Addressing practical issues in which CEDD's involvement could enhance timely and accurate payment administration to support cash flow and contractual compliance.

3) **Financial Matters of Compensation Events**

   - Guiding on managing the assessment of changes to the Prices due to compensation events (CEs) from notification to implementation.

4) **Cost-effectiveness Enhancement and Financial Incentivisation**

   - Offering guidance to encourage performance and optimise value through efficient and effective implementation of cost-saving measures and financial incentives.

Each chapter contains the following sections:

- Overview of the chapter's focus and how the NEC contracts should be efficiently and effectively operated with CEDD's participation.
- Good practices and know-how: Illustration of good practices and know-how for the administration of the relevant subject matter.
- Topical issues: Discussion of common day-to-day issues faced by project teams.
- FAQs and examples: Frequently asked questions and real-life examples to illustrate key points in applying NEC principles.

Disclaimer

All materials and information in this playbook should not be regarded as a substitute for and do not constitute part of the prevailing guidelines, practice notes and relevant contract provisions, etc. In the event of any inconsistency or conflict between the prevailing guidelines, practice notes or relevant contract provisions etc. and this playbook, the former takes precedence. This playbook is produced for internal information and educational purposes only. It does not constitute, nor is it intended to constitute, nor should it be construed or relied upon as any legal, contractual, or professional advice.

In case of any doubt, you should seek advice from the NEC Executive Support Team or Contract Advisory Unit, or other independent professional or legal advice before taking action on any matters to which the information or material provided in this playbook may be relevant.

Acronyms

Acronyms used in this playbook are as follows:

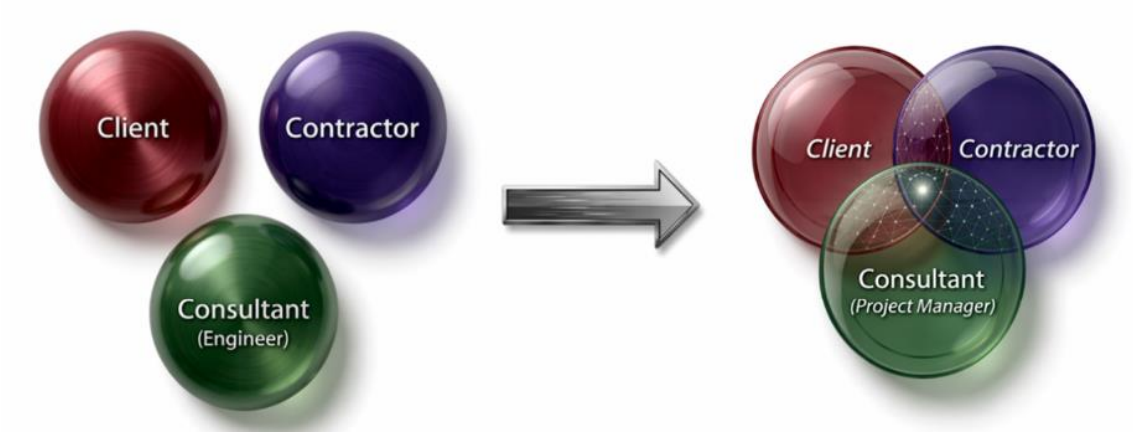
- CEDD – Civil Engineering and Development Department
- CE – Compensation event
- CNCE – *Contractor's* notification of compensation event
- CSD – Cost Savings Design
- DCDE – Departmental Common Data Environment
- DEVB – Development Bureau
- ECC – Engineering and Construction Contract
- ECC/HK – Engineering and Construction Contract Hong Kong edition
- EOT – Extension of time
- EW – Early warning
- EWM – Early warning meeting
- KPI – Key Performance Indicator
- *PM – Project Manager*
- PMI – *Project Manager's* instruction
- PN/ECC – DEVB's NEC Practice Notes for Public Works Projects in Hong Kong – Volume 1 – Engineering and Construction Contract
- PWDD – Price for Work Done to Date
- RSS – Resident site staff
- SoCC – Schedule of Cost Components
- TOTP – Total of the Prices

1 Financial Control

1.1 Overview

Effective financial control is essential to the successful administration of NEC contracts. Under the NEC framework, financial control is not limited to cost monitoring, but requires structured, proactive and collaborative management throughout the project lifecycle.

In performing its role as the *Client*, CEDD is required to go beyond the conventional contract administration role and actively facilitate project delivery, including financial control, during the construction stage. Under the Engineering and Construction Contract (ECC), most of the financial-related duties are carried out by the ECC *Project Manager* (*PM*), but CEDD needs to be involved.



Project teams working separately with CEDD as an administrator under GCC contract form

Project teams working collaboratively with CEDD as a facilitator under NEC contract form

This chapter focuses on how CEDD can achieve robust financial control in NEC contracts through:

- Early and proactive engagement to manage costs, risks and changes before deterioration;
- Structured financial processes supporting planning, monitoring and governance;
- Collaborative working amongst CEDD, the *PM* and the *Contractor* in accordance with clause 10.2; and
- Timely decision making and escalation to maintain project momentum and efficiency.

By applying the principles and practices set out in this chapter, CEDD officers can further:

- strengthen financial discipline and predictability;
- promote transparency and auditability in financial administration;
- support amicable resolution and avoidance of disputes; and
- embed financial control as an integral part of healthy NEC contract management.

1.2 Good practices and practical know-how

1.2.1 Dual roles of project owner and facilitator

Under NEC contracts, CEDD performs a dual role throughout the construction stage:

- as the project owner, exercising governance and stewardship over public resources; and
- as a facilitator, enabling collaborative process and effective decision-making by the *Contractor,* the *PM* and the *Supervisor*.

Project owner's key duties:

- safeguarding public interest, funding and value for money;
- establishing clear governance, controls and accountability;
- ensuring compliance with prevailing policies, procedures and approvals; and
- making timely decisions on matters involving cost, programme, risk and priority.

Facilitator's key duties:

- promoting collaborative working with the *PM,* the *Supervisor* and the *Contractor* as per clause 10.2;
- removing obstacles, resolving ambiguities and expediting progress;
- encouraging open communication, early discussion and joint problem-solving; and
- supporting timely agreement of financial matters to avoid deterioration and disputes.

1.2.2 Active participation in meetings

Active participation in meetings is a key approach through which CEDD discharges its dual roles as a project owner and a facilitator, and maintains effective financial control under NEC contracts.

CEDD should not limit its involvement to passive attendance or information-taking only, but should participate purposefully to steer collaborative discussions, resolve issues and support timely decisions.

In addition to early warning meetings (EWMs), CEDD should actively participate in meetings with significant financial or contractual implications, including:

Types of meeting	Purposes and other details of the meeting
Financial meeting	See section 1.3.1.1 of this playbook
Champion group meeting	See section 1.3.5 of the CEDD NEC Playbook (Construction)
Mission room meeting	See sections 1.2.3 and 1.3.6 of the CEDD NEC Playbook (Construction)

1.2.2.1 Why active participation in meetings?

Through active participation in meetings, CEDD officers can assist in the project delivery for better financial control by:

- maintaining early visibility of emerging financial, programme and risk issues;
- ensuring matters affecting cost, value for money and governance are identified and addressed promptly;
- supporting the *PM* in managing the contract effectively; and
- promoting collaborative resolution of issues under a spirit of mutual trust and co-operation as stated in clause 10.2.

1.2.2.2 How should CEDD officers actively participate?

When participating in meetings, CEDD officers should:

- attend meetings with a clear understanding of the issues to be discussed;
- contribute constructively to discussions on costs, risks, changes and affordability;
- facilitate alignment amongst CEDD, the *PM* and the *Contractor*;
- encourage early resolution of disagreements before deterioration; and
- ensure agreed actions are clear, owned and followed through.

> Active and effective participation in meetings enables CEDD to combine governance with facilitation, help maintain momentum, strengthen financial discipline and avoid disputes during the construction stage of NEC contracts.

1.2.3 Management of NEC Health Check Key Performance Indicators

NEC Health Check Key Performance Indicators (KPIs) provide a structured and objective view of contract administration performance, including aspects of programme, Prices, *Contractor's* notification of compensation event (CNCE), CE and early warning (EW) as provided in the Departmental Common Data Environment (DCDE) with direct or indirect financial implications. When used proactively, KPI is, rather than a retrospective performance scorecard, an important management tool to support financial control under NEC contracts by enabling CEDD, the *PM* and the *Contractor* to:

- obtain early visibility of deteriorating trends affecting programme, costs, cash flow, CEs and risks;
- identify emerging issues before they crystallise into potential CEs or even disputes;
- promote timely corrective actions through collaborative discussions; and
- maintain transparency, predictability and accountability in NEC contract administration.

While only some KPIs are directly financial in nature, all KPIs have the potential to affect financial outcomes if persistent weaknesses remain unaddressed adversely.

1.2.3.1 How to use the Health Check KPIs to enhance financial control?

In its role as the *Client*, CEDD should take an active and facilitative role in the management and use of NEC Health Check KPIs to strengthen financial control, improve predictability, and reduce dispute risk. Accordingly, CEDD officers should use KPI information to:

- monitor trends, focusing on deterioration and persistent weaknesses rather than isolated results;
- identify early financial risk signals, including delays in implementation of CEs, prolonged unclosed EWs, or increasing divergence in cost or programme forecasts;
- drive timely discussion and intervention through financial meetings, champion group meetings and mission room meetings;

- promote early corrective action to prevent escalation into claims or even disputes; and
- support continuous improvement by sharing learning points and good practices across projects.

> The proactive and facilitative use of KPIs enables CEDD to enhance financial discipline without excessive control, improve cost and cash flow predictability and reinforce NEC's principles of mutual trust, early warning (EW) and collaborative management.

1.2.4 Resolving and avoiding disputes

Under NEC contracts, the effective resolution and avoidance of disputes is fundamentally linked to early action, transparency and collaboration, rather than reliance on formal dispute resolution procedures. Unresolved disagreement is a common precursor to claims, cash flow volatility and disputes. CEDD plays a critical enabling role in fostering an environment where disagreements are addressed early, constructively and proportionately in an attempt to minimise the risk of escalation to disputes.

1.2.4.1 How could CEDD officers help resolve and avoid disputes?

To minimise the likelihood of disputes and their financial consequences, CEDD officers should:

- identify issues early, using meetings, EWs and KPI trends to detect emerging financial or contractual risks;
- facilitate open dialogue, ensuring differing views are surfaced and discussed constructively;
- promote collaborative problem solving, focusing on practical, outcome-based solutions;

- support timely escalation to and decision-making by management level where the relevant parties cannot resolve issues at the working level; and
- ensure clarity and follow-through, confirming decisions, actions and responsibilities to prevent repeating issues.

> A proactive and facilitating approach by CEDD helps reduce uncertainty over costs, Prices, cash flow and final outturn, minimise escalation into claims or formal disputes, and reinforce NEC principles of mutual trust, early warning and collaborative management, while ensuring value for money.

1.3 Topical issues

1.3.1 Issue no. 1 – How to enhance the effectiveness of meetings on financial control?

Regular meetings are always good practices for project delivery, as they provide platforms for attendees to communicate and ideally resolve issues with the agreed way forward. To enhance the effectiveness of a meeting, the meeting itself should be action-oriented, and all attendees will have "takeaway" actions after the meeting, with a full understanding of what to do, how, when and by whom to complete the agreed actions.

To further promote the effectiveness of CEDD's facilitator role in the meetings, CEDD officers concerned should review the issues to be discussed before the meeting and, where appropriate, conduct pre-meetings amongst the parties concerned. Meanwhile, it is always desirable to work with the project teams to review the progress of implementing the actions agreed in previous meetings rather than simply conducting the "reporting" of progress in each meeting.

1.3.1.1 ***FAQ***

What are the key purposes and typical arrangement of financial meetings?

Key purposes: Financial meeting is a primary forum under NEC contracts for maintaining effective financial control during the construction stage. They also provide a structured platform for early identification, discussion and resolution of financial issues before escalating them into claims or disputes. Financial meetings are intended to support:

- timely and transparent management of payments, CEs and forecasts;
- early identification of cost, cash flow and risk issues;
- collaborative discussion of emerging concerns and proposed actions; and
- informed decision-making consistent with NEC's principles of mutual trust and collaborative management.

Role of CEDD: In its role as the *Client*, CEDD should actively participate in financial meetings to facilitate progress on key financial matters, rather than merely receive information reported by the *PM*. Accordingly, CEDD officers should:

- use financial meetings to test robustness of forecasts, assumptions and trends;
- ensure issues with financial implications are surfaced and addressed early;

- collaborate with the *PM* and the *Contractor* in steering discussions towards resolution and action; and
- intervene, if necessary, to expedite decision making or enable proportionate escalation.

Financial meetings are normally led by the *PM* or the *PM's* delegate, with support from the resident site staff (RSS) team, and are attended by the *Contractor* and CEDD. In most cases, CEDD's project officers at senior professional and professional ranks are required to attend. Where necessary, attendance by an officer at D1 rank or above is required to facilitate decision-making on the financial issues to be discussed in the meetings.

Typical arrangement: To maximise effectiveness, financial meetings should be regular and disciplined. Typically they should be held monthly or as required by the contract, and supported by timely circulation of relevant information, including forecasts, KPI trends and outstanding actions. Meanwhile, each meeting should be action-oriented, with clear focus on resolution rather than reporting. A well-structured financial meeting agenda typically covers, amongst others, the following key items:

Item No.	Item description	Area of discussion
1	Review of previous actions	Follow-up on outstanding financial actions and decisions.
2	Financial performance overview	• Current and forecast final Price for Work Done to Date (PWDD) and total of the Prices (TOTP). • Subcontracting issues with adverse financial implication. • Key variances and emerging trends.
3	*PM's* instructions (PMIs)	• Outstanding actions before issuance (e.g. cost estimation, DEVB/PSGO vetting and CEDD's approval). • Disagreed PMI related items (e.g. scope and need for PMI issuance).
4	CEs and potential changes	• Status of notified, assessed and implemented CEs (by the *Contractor's* quotation or the *PM's* assessment) plus any disagreed items. • Difference in financial and time implication between the *Contractor's* quotation and the *PM's* assessment. • Discussion of mitigation or recovery measures.
5	Cost-saving initiatives	• Identification and tracking of cost-saving opportunities. • Review of implemented measures and outcomes (e.g. amount of cost saving).
6	Risk and contingency management	• Assessment of financial risks and contingency allocations.

Item No.	Item description	Area of discussion
7	Forward planning	• Forecasting future expenditure. • Effect of *Contractor's* share (pain) deduction on the *Contractor's* cash flow. • Review of NEC Health Check KPIs in DCDE.

A template of a suggested agenda for the financial meeting is contained in **Appendix A** for reference.

1.3.2 Issue no. 2 – How could the NEC Health Check KPIs help CEDD perform a facilitator role?

NEC Health Check KPIs are intended to provide a regular and objective assessment of contract performance over the NEC administration. They are designed to encourage the project teams to settle all NEC-related issues within the "healthy" period as reflected by the corresponding KPI.

Where KPI trends indicate differences in views amongst CEDD, the *PM* and the *Contractor*, for instance, on the forecast final TOTP, early discussion and timely resolution are essential. Addressing such differences promptly helps:

- reduce uncertainty over cost and cash flow;
- prevent accumulation of unresolved financial issues; and
- minimise the likelihood of disputes.

By actively using NEC Health Check KPIs in this way, CEDD strengthens its facilitator role, enhances financial control, and supports the orderly and collaborative administration of NEC contracts.

1.3.2.1 ***FAQ***

What are typical steps to review NEC Health Check KPIs?

KPI review is suggested to include the following typical key steps:

Step No.	Description
1	Review of previous Health Check results (with reference to DCDE records) and follow-up actions.
2	Presentation and discussion of each KPI (using DCDE dashboards).
3	Root cause analysis and lessons learnt.
4	Agreement on improvement actions and responsibilities.
5	Planning for next review.

1.3.2.2 ***FAQ***

What should be done when issues are left unresolved within the "healthy" timeframe?

Project teams should always proactively plan and actively take action before the "unhealthy" situation revealed by the NEC Health Check KPI concerned arises.

> The golden rule is "do not wait, and escalate the unresolved issue" to the senior management to expedite the resolution of the issues.

This could ensure effective financial control in place and, more importantly, lead to a "healthy" delivery of the project towards completion within the time, cost and quality targets attained as well as with the risk exposure to disputes minimised.

If the KPI is in "green" status, does it mean that there is no problem in the relevant aspect in the contract?

While KPIs offer quick contract health checks, the project team must recognise that "green" status may hide problematic issues. Taking KPI 3 (i.e. difference between the *PM's* and the *Contractor's* forecast TOTP) as an example:

- A neutralised total difference could mask conflicting subcomponent variances.
- Comparing with the *PM's* assessment, the *Contractor* might over-forecast CEs by $50 million while under-forecasting inflation adjustments by $50 million – balancing the total variance to zero but hiding two critical estimation differences between the *PM's* and the *Contractor's* assessments.
- This aggregation effect creates a false sense of alignment that may potentially create disputes and budget overrun later on.

> To prevent any potential oversight, the project team should treat KPIs as preliminary diagnostic tools rather than final verdicts, and drill into each KPI's calculation instead of strictly accepting reported figures. The adoption of such a granular analysis prevents hidden discord from evolving into contractual disputes during the later stage of the contract.

2 Payment

2.1 Overview

Payment under the ECC/HK is designed to be regular, transparent, auditable and contemporaneous, ensuring that the *Contractor* is paid fairly for work done while maintaining robust financial control by CEDD. Payment to the *Contractor* is based on the amount due assessed at each assessment date in accordance with clause 50.3, comprising:

- the PWDD;
- other amounts to be paid to the *Contractor*; and
- less amounts to be paid by, retained or deducted from the *Contractor*.

The approach to assessing PWDD differs with each main Option:

- Options A and B (priced contracts)
  - PWDD is assessed using a retrospective approach, based on works completed up to the assessment date.
- Options C and D (target contracts)
  - PWDD is assessed using a prospective approach, based on the total Defined Cost forecast to be paid by the *Contractor* up to one week after the next assessment date.
  - This forecast-based approach requires a higher degree of collaborative working between the *PM* and the *Contractor*, with facilitative input by CEDD where required.

This chapter focuses on the assessment of the PWDD under target contracts and in particular, supports CEDD's role as the *Client* in supporting and facilitating:

- collaborative management of the PWDD assessment process leading to on-time certification by the *PM* up to final payment;
- rigorous, transparent, fair and auditable assessments of the PWDD by adopting good practices to align with the use of the prospective approach;
- prompt finalisation of Defined Cost following interim payment certification; and
- proactive and prompt resolution of Disallowed Cost to minimise risk exposure to disputes.

2.2 Good practices and practical know-how

2.2.1 Dual roles of project owner and facilitator

Under NEC contracts, payment assessment is not merely a procedural activity, but a critical financial control mechanism that directly influences cash flow, cost certainty and the health of working relationships. It is the *PM's* role to assess payments to the *Contractor*. Meanwhile, CEDD remains performing its dual roles as both project owner and facilitator. CEDD must exercise these two roles in balance to ensure timely, fair and auditable payments while protecting public financial accountability, with its key duties illustrated below:

Project owner's key duties:

- ensuring payment assessments comply with contract provisions;
- maintaining financial discipline and auditability;
- overseeing adherence to agreed verification, sampling & record-keeping arrangements;
- ensuring risks of overpayment, premature payment or payment for non-compliant cost are reduced; and
- supporting consistency of approach across projects and upholding value-for-money principles.

Facilitator's key duties:

- facilitating early and continuous dialogue between the *PM* & the *Contractor* on payment-related matters;
- supporting collaborative resolution of payment related issues such as forecast assumptions & supporting records;
- encouraging early clarification of potential Disallowed Cost to avoid later disagreement;
- helping resolve issues that may delay assessment or certification; and
- promoting collaboration as per clause 10.2 in all payment matters.

When CEDD effectively performs its dual roles as project owner and facilitator, payment assessment becomes a tool for financial control rather than a source of disputes, reinforcing NEC's key objective of collaborative, proactive and transparent management.

2.2.2 Forecast payment assessment

Interim payment for target contracts is assessed using a forecast approach based on the total Defined Cost forecast to be paid by the *Contractor* up to 1 week after the next assessment date under ECC/HK, rather than relying solely on costs already paid.

To efficiently and effectively manage risk, the forecast approach is to be operated within a robust verification framework, including early full checking during the first 6 payment applications, followed by risk-based sample checks according to the guidelines as provided in the DEVB's NEC Practice Notes for Public Works Projects in Hong Kong - Volume 1 - Engineering and Construction Contract (PN/ECC) paragraphs 4.3.8.12 and 4.3.8.13.

2.2.3 Finalisation of Defined Cost

Clause 50.9 is intended to introduce a progressive and structured mechanism to expedite the finalisation of Defined Cost, which could minimise risk of disputes. It requires the *Contractor* to notify the *PM* when the Defined Cost for a part of the *works* has been finalised and to make available the necessary records to demonstrate that the Defined Cost has been correctly assessed. This mechanism allows Defined Cost to be agreed and finalised progressively, rather than deferred entirely to the final account stage.

Meanwhile, the *PM* can reinforce this approach by encouraging early and systematic finalisation of Defined Cost for completed parts of the *works*. This promotes timely correction of errors and transparency in cost reporting.

For the finalisation of Defined Cost for Subcontractors, all the site instructions issued by the *Contractor* to the Subcontractors, particularly for those as necessitated by CEs, should be actively monitored and reviewed by the *PM* and the *Contractor*. This is such that the financial implications of these site instructions and the related claims, if any, by the Subcontractors could be openly and timely discussed for a prompt settlement and an early finalisation of the associated Defined Cost.

The following example illustrates a good practice to finalise Defined Cost:

Example of Good Practice for Finalisation of Defined Cost

Context	ECC Option C contract under roads and drainage category achieved early Completion.
What was done	• Defined Cost was progressively finalised during construction. • The *PM* actively involved in the review on the site instructions issued by the *Contractor* to the Subcontractors as well as the Subcontractors' claims for additional payment. • Disallowed Cost and subcontract final accounts were resolved on an ongoing basis. • All Defects were corrected by the *defect date*. • Final amount due was assessed at the last assessment date being 4 weeks after the issuance of the Defects Certificate with the final payment certificate issued a week thereafter. • The *Client* actively participated to facilitate the finalisation process.
Why it worked	• Prevented accumulation of unresolved financial issues. • Reduced pressure and contention at the final account stage. • Improved financial certainty for all parties.
Why this matters	• Late reconciliation of financial issues is a common source of disputes. • Progressive finalisation of Defined Cost strengthens financial certainty and supports timely close-out.
Key takeaway	The *Client's* active encouragement facilitated a progressive finalisation of Defined Cost to enable a prompt resolution of final account and avoid disputes effectively.

As a good practice, the progressive finalisation of Defined Cost aligns with NEC principles of collaborative management, which helps:

- reduce the accumulation of unresolved cost issues;
- lighten the workload at final account stage; and
- provide greater cost certainty to both CEDD and the *Contractor*.

2.3 Topical issues

2.3.1 Issue no. 1 – Defined Cost

For target contracts, Defined Cost is defined under clause 11.2(28) as the cost of the components in the Schedule of Cost Components (SoCC) less Disallowed Cost. From the perspective of payment assessment under target contracts, Defined Cost:

- represents the cost incurred by the *Contractor* in Providing the Works and is assessed in accordance with the SoCC;
- includes only those cost components that are necessary for Providing the Works and is calculated using the rates and percentages, if any, as stated in the Contract Data, and at open market prices or competitively tendered prices with deductions for all recoverable discounts, rebates and taxes in accordance with clause 52.1;
- expressly excludes Disallowed Cost; and
- forms the basis for assessing the PWDD, and directly influences interim payments, final assessment and pain/gain share arrangements.

The SoCC provides a structured and auditable framework for assessing Defined Cost payment on a cost reimbursable basis. Across all components, the overriding principle is that an amount is included only once and only if it is incurred to Provide the Works. The key assessment principles for the cost components of people, Equipment, Plant and Materials, subcontracting, charges, manufacture and fabrication, design, insurance and insurance premiums are covered in the PN/ECC and therefore not replicated in this playbook.

Overall, the underlying principle for the assessment of each SoCC component should be risk-based, evidence-driven and proportionate, balancing cash flow support for the *Contractor* with strong governance for CEDD.

2.3.1.1 ***FAQ***

When should the Defined Cost be finalised given that there is no specified timeframe requirement set out in clause 50.9?

Clause 50.9 requires the *Contractor* to notify the *PM* when the Defined Cost for a part of the *works* has been finalised.

> It is always a good practice to conduct progressive finalisation of Defined Cost during construction, which could reduce the accumulation of unresolved cost issues including Disallowed Cost, lighten the workload at the final account stage, and provide greater certainty to both CEDD and the *Contractor*. See section 2.2.3 above for further details.

2.3.1.2 ***FAQ***

Is there any good practice for assessing Defined Cost for people?

Defined Cost for people is recognised as a common area of disagreement in payment assessment under target contracts. The *PM* needs to discuss and agree with the *Contractor* shortly after the *starting date* the percentage of involvement for those staff who are not deployed on a full-time basis within the Working Areas. Subsequently, the *PM* should regularly review the agreed percentage of involvement of each concerned staff with the *Contractor*, and the *PM* may adjust some of the pre-agreed percentages to suit the actual progress of the *works* and the financial status of the contract. In any case, this process could minimise any potential disagreement or even dispute over Disallowed Cost for those staff not deployed on a full-time basis.

The following example illustrates a good practice that could be considered for adoption in typical target contracts:

Example of Good Practice for Assessment of Defined Cost for People

Context	ECC Option C contract under roads and drainage category with collaborative approach to enhance cost-effectiveness of the deployment of people for Providing the Works.
What was done	• Updated organisation chart and staff list were provided before each assessment date. • Attendance records/timesheets were normally used as the verification tool but they should not be treated as the sole basis for determining people cost as they might not capture attendance or duties performed under all circumstances. • *PM* reviewed the reasonableness of the time charged against the duties performed, and discussed with the *Contractor* for any apparent irregularity. • *PM* re-checked any employment contract on as-need basis only (e.g. in case of unusual or abnormal payment identified).
Why it worked	• Ensured transparency and consistency with due consideration of cost-effectiveness applied. • Proactively avoided disallowance of genuine costs. • Reduced disputes.
Why this matters	• People costs are a common source of disagreement. • Proportionate verification builds trust and audit confidence.
Key takeaway	The *Client* supported the application of systematic and pragmatic checks on people costs to balance control and collaboration.

2.3.1.3 ***FAQ***

What if some of the staff deployed by the *Contractor* appear not productive or efficient enough for Providing the Works?

> The cost of the staff not productive or efficient for Providing the Works alone is not Disallowed Cost. In the best interest of the contract, the *PM* and the *Contractor* should, as a good practice, work together to regularly review the cost-effectiveness of the people as well as other resources deployed for Providing the Works to enable the *Contractor* to make appropriate adjustments to its deployment for Providing the Works.

For instance, if any staff deployed by the *Contractor* is found not productive or efficient enough and hence not cost effective as originally anticipated, the *PM* and the *Contractor* should, with timely support by CEDD as necessary, discuss and identify the way forward which may include staff replacement in an attempt to rectify the undesirable situation.

2.3.1.4 ***FAQ***

Is it acceptable for the *Contractor* to propose its head office or other project office to be added to the Working Areas over the entire construction period?

Proposals for adding temporary working areas in the *Contractor's* head office or other project office (if permitted by CEDD for that project) to the Working Areas for a certain period during construction (e.g. until the establishment of the site office ready for use) in accordance with clause 16.3 are common in local NEC contracts. The acceptability of such proposals is to be considered on a case-by-case basis, taking due account of the best interests of each contract concerned. In any case, the proposed working area must meet the two criteria as intended in clause 16.3 for the *PM* to consider its acceptance of being added to the Working Areas:

- it should be necessary for Providing the Works, and
- the *Contractor* should not use it for work not in the contract (i.e. the *Contractor* should use it only for work in the contract).

Proposals for adding areas to the Working Areas over the entire construction period are less common, which, if submitted in accordance with clause 16.3, the *PM* is obliged to consider for acceptance or not.

Before the submission of the proposed areas added to the Working Areas by the *Contractor*, it is always a good practice for the *PM* and the *Contractor* to discuss the costs that would be charged, the benefits it brings, and whether it is in the best interest of the contract.

Meanwhile, the SoCC item 1 states "the people listed in Contract Data who are employed by the *Contractor*, whose normal place of working is not within the Working Areas and who are working outside of the Working Areas other than on manufacture and fabrication and design" under its third bullet and "If the *Project Manager* agrees, additional people may be assessed as if they were listed in the Contract Data" under its last paragraph. Accordingly, these provisions could serve as another option for the *PM* and the *Contractor* to consider other than adding new areas to the Working Areas.

2.3.2 Issue no. 2 – Supporting documents

From the perspective of payment assessment under target contracts, Defined Cost is payable only when the *Contractor* can demonstrate, through appropriate supporting documents, that the costs applied are incurred to Provide the Works. Whilst documentary substantiation is central to cost governance, the *PM* should apply it in a risk-based and proportionate manner rather than as a mechanical or excessive audit exercise.

The *Contractor* is responsible for keeping and allowing the *PM's* inspection of clear, well-organised and contemporaneous records for each cost item, typically including invoices, purchase orders, delivery notes, payment records, receipts and relevant site records. These documents collectively demonstrate the nature, quantity, timing and payment status of the cost. The PN/ECC recognise practical constraints and allows the *PM* to accept alternative reasonable evidence where full documentation is not available for minor or urgent purchases, provided the cost is otherwise credible and justified. In short, the *PM* is required to exercise an appropriate level of reasonableness and flexibility but remain vigilance against, amongst others, the common practices in contracting business when considering supporting documents for forecast Defined Cost.

To enhance efficiency and auditability, a good practice as supported in the PN/ECC is to use cost coding systems, inventories for Plant, Materials and Equipment, and agreed arrangements for handling sensitive payment information. These measures support transparent verification while safeguarding commercial confidentiality.

2.3.2.1 ***FAQ***

Should the *PM* disallow a forecast Defined Cost included in an interim payment application where the *Contractor* cannot provide a corresponding invoice or payment application from the Subcontractor/supplier?

Any forecast Defined Cost included in an interim payment application should normally be evidence-based with supporting information such as the invoice or payment application by the Subcontractor/supplier submitted in accordance with the terms of the subcontract, which could justify a payment to be made by the *Contractor* up to one week after the next assessment date. However, there may be cases whereby the *Contractor* can justify the forecast Defined Cost by means of the actual progress or the forecast progress of the *works* against the Accepted Programme together with the payment terms of the subcontract, even if the concerned Subcontractor/supplier has yet submitted its invoice/payment application to the *Contractor* by the time when the *PM* assesses the amount due.

2.3.3 Issue no. 3 – Disallowed Cost

Disallowed Cost is defined under clause 11.2(30) for target contracts as cost which is not justified by the *Contractor's* accounts and records, should have not been paid to a Subcontractor or supplier in accordance with its contract, or is incurred solely due to the *Contractor's* failure to comply with contractual requirements, including prescribed acceptance or procurement procedures, early warning obligations, or mandatory notifications relating to adjudication or arbitration proceedings. It also includes the cost of correcting Defects after Completion, correcting Defects arising from the *Contractor* not complying with constraints on how it is to Provide the Works stated in the Scope, and the cost of Plant, Materials or resources not reasonably used in Providing the Works, after allowing for reasonable wastage, availability and utilisation, unless arising from a change to the Scope.

A good practice is that the *PM* and the *Contractor* should promptly attempt to resolve the Disallowed Cost items identified in any payment application during the upcoming financial meetings or on other communication platforms, as appropriate. In any case, the *PM* and the *Contractor* should avoid accumulating unresolved Disallowed Cost items, as this may result in potential disputes. From time to time, it is always desirable, if not essential, to have CEDD's participation to facilitate the amicable resolution. Where necessary, timely escalation to the senior management is required to expedite the decision-making process.

2.3.3.1 ***FAQ***

The *Contractor* applied payment for Defined Cost for correcting a Defect before Completion. What should the Parties and the *PM* do?

In accordance with clause 11.2(30), the *Contractor's* cost of correcting Defects before Completion is not a Disallowed Cost unless the Defect is caused by the *Contractor* not complying with a constraint on how it is to Provide the Works stated in the Scope. Therefore, the *PM* should ascertain whether or not such cost is a Defined Cost against clause 11.2(30) in payment assessment.

This would appear unfair and unreasonable in general. However, the rationale behind it is to encourage the *Contractor* to identify and correct Defects, if any, as early as practicable before Completion to secure a smoother hand-over of the *works* shortly after Completion in the much better interest of the *Client* and the public in terms of their use of the *works* after Completion. Even though the *Contractor* could be paid for correcting a Defect before Completion, this would inevitably lead to an undesirable increase in the total Defined Cost and hence the total PWDD. As a result, the gain share payable to the Parties is to be reduced under a gain scenario. If in a pain scenario, the Parties will suffer from a deteriorating pain share.

As a good practice, to avoid recurrence of Defects whether before or after Completion, the *PM* and the *Contractor* should jointly and timely review the permanent/temporary work design and construction process, identify weak spots and make necessary changes, including workmanship, site resources, method statements, etc. In parallel, CEDD should facilitate the enhancement process to drive a more cost-effective project delivery.

2.3.3.2 ***FAQ***

From CEDD's perspective, what are the good practices to minimise risk exposure to disputes over Defined Cost and Disallowed Cost?

Under target contracts, disputes over Defined Cost and Disallowed Cost commonly arise not from a single payment decision, but from the accumulation of unresolved issues, misaligned expectations or late challenges to cost entitlement.

From CEDD's perspective, minimising risk of disputes therefore requires early, consistent and proactive management of cost assessment. To minimise risk exposure to disputes over Defined Cost and Disallowed Cost, the following good practices could apply to typical target contracts:

Item No.	Practice item	Action item
1	Establish clarity early	• Set clear expectations at the outset on cost eligibility, supporting records and verification approach in accordance with the SoCC. • Review the proposed subcontract conditions of contract including amendments thereto carefully to ensure the payment provisions properly aligned with the main contract. • Ensure the *PM* and the *Contractor* have a common understanding of how Defined Cost and Disallowed Cost will be treated in practice. • Agree with the *Contractor* shortly after the *starting date* the reasonable wastage percentage for each major Plant and Materials, and the reasonable availability and utilisation for each major Equipment where appropriate, which are subject to regular review to ensure their reasonableness against, for instance, the actual site conditions. • Avoid reliance on implicit assumptions or informal practices that may later be contested.
2	Promote continuous and proportionate review	• Encourage ongoing review of cost records, rather than deferring scrutiny to later stages or final assessment. • Support proportionate, risk-based checking in line with the stage and complexity of the contract. • Avoid unnecessary re-checking of low-risk or recurring cost items once confidence has been established.
3	Surface potential Disallowed Cost early	• Facilitate early discussion of cost items that may give rise to Disallowed Cost, such as non-compliant procurement, unsupported claims or inefficient deployment of resources. • Encourage the *PM* to provide clear and timely feedback to the *Contractor* on such items. • Identify the potential Disallowed Cost items earlier to help avoid surprise disallowance and entrenched disagreement at later stages.
4	Encourage progressive finalisation of Defined Cost	• Support progressive finalisation of Defined Cost during construction wherever practicable. • Avoid allowing unresolved cost issues to accumulate until final account stage. • Agree progressively to reduce uncertainty, limit retrospective adjustment and improve auditability.
5	Facilitate timely discussion and resolution	• Use financial meetings, KPIs and EWs to trigger early, evidence-based discussions on cost disagreement. • Act as a facilitator where differences in interpretation arise between the *PM* and the *Contractor.* • Where issues cannot be resolved at the working level, enable proportionate escalation to secure timely decisions.

Item No.	Practice item	Action item
6	Maintain transparency and documentation	• Ensure that reasons for acceptance or disallowance of cost are clearly documented and communicated. • Consistent, well-reasoned records reduce misunderstanding and provide a defensible audit trail. • Transparency helps preserve trust even where cost disallowance is necessary.

By applying these good practices, CEDD helps:

- reduce the likelihood of disputes over Defined Cost and Disallowed Cost;
- avoid adversarial behaviours driven by late or unexpected cost challenge;
- maintain predictability of PWDD and final outturn; and
- reinforce NEC principles of proactive management, transparency and mutual trust.

2.3.4 Issue no. 4 – Wastage and idling control

Under target contracts, effective control of Materials wastage and Equipment idling is essential to avoid Disallowed Cost. The *Contractor's* cost for procuring Plant, Materials and Equipment is payable as Defined Cost only if they are used to Provide the Works, after allowing for reasonable wastage and reasonable availability and utilisation as stated in clause 11.2(30).

The PN/ECC emphasises the need for the *Contractor* to maintain proper inventory records recording deliveries, usage, stock levels and disposal of Plant, Materials and Equipment, enabling monitoring of consumption and identification of excessive wastage; allowable wastage should normally be less than 10%, subject to project nature and material characteristics (the PN/ECC paragraph 4.3.8.4 refers). For Equipment, the *PM* should actively check for idling on site, and payment should not be made for idling periods unless the *Contractor* provides clear justification, such as planned future use under the Accepted Programme, standby requirements, market availability or mobilisation and demobilisation considerations (the PN/ECC paragraph 4.3.9.3.9 refers). Where idle Equipment or surplus Materials will no longer be required, prompt removal or disposal, with appropriate credit for any sale proceeds, is expected (the PN/ECC paragraph 4.3.8.4.4 refers).

2.3.4.1 ***FAQ***

Is the idling cost of Equipment required to be considered as Disallowed Cost when assessing the Defined Cost for hiring such Equipment?

In accordance with the 7th bullet of clause 11.2(28), the cost of resources not used to Provide the Works (after allowing for reasonable availability and utilisation) or not taken away from the Working Areas when the *PM* requested is a Disallowed Cost. Resources, including Equipment, must be reasonably available and utilised for Providing the Works. Equipment that remains idle due to poor planning, sequencing or coordination may be treated as Disallowed Cost. To minimise the risk exposure of disagreement or even disputes over Disallowed Cost, the *PM* and the *Contractor* should proactively discuss and agree on the reasonable availability and utilisation of resources (which could be by types or categories) such that any cost incurred (e.g. idling of Equipment) not beyond such reasonable availability and utilisation will not be disallowed. When considering whether the idling cost of Equipment should fall into Disallowed Cost, the *PM* should also consider the forecast cost of demobilisation and re-mobilisation of the Equipment if later required, to arrive at the overall cost-effectiveness of the deployment of the Equipment for reaching a proper decision.

2.3.5 Issue no. 5 – Disposal of unused Plant and Materials

Under target contracts, Defined Cost includes only the cost of Plant and Materials used to Provide the Works, after allowing for reasonable wastage. Where unused Plant and Materials become surplus, or are no longer required, the Defined Cost is required to be adjusted by crediting the value recovered from disposal, ensuring that CEDD does not pay for unnecessary or unused resources.

> As a good practice, active inventory management as the foundation for assessing credit value should be conducted. The *Contractor* is required to maintain up-to-date inventories recording delivery, usage, remaining stock, removal and disposal of Plant and Materials. The *Contractor* should arrange timely disposal, sale or transfer of surplus materials where appropriate. Any payment received or recoverable value from disposal must be credited against the relevant Defined Cost item, thereby reducing the PWDD. Failure to give proper credit may result in overstatement of Defined Cost and give rise to Disallowed Cost.

In practice, the assessment of credit value is based on actual disposal proceeds or reasonably ascertainable market value, supported by contemporaneous records such as sales invoices, disposal notes or credit documentation.

2.3.5.1 ***FAQ***

Is it necessary to conduct a tender exercise for disposal of Plant and Materials to obtain credit value for Defined Cost adjustment?

The credit value is part of the Defined Cost for Plant and Materials. Therefore, it should be "at open market or competitively tendered prices with deductions for all discounts, rebates and taxes which can be recovered" as stated in clause 52.1. In other words, it is desirable to conduct a competitive tender process for the disposal of Plant and Materials no longer required for Providing the Works, or if it is not practical to do so, the *Contractor* should normally obtain at least three up-to-date quotations to support the disposal costs meeting the open market prices.

2.3.6 Issue no. 6 – Subcontracting

Under target contracts, Defined Cost for Subcontractors is assessed based on payments made by the *Contractor* to Subcontractors for work that is necessary to Provide the Works, subject to compliance with the SoCC and the contract's subcontracting procedures.

A key principle is that procurement compliance and price transparency underpin entitlement. Subcontract costs are normally recoverable where Subcontractors are appointed in accordance with the tender procurement and acceptance requirements set out in the contract, and where the costs are at open market or competitively tendered prices. If there is non-compliance with procurement procedures, the *PM* should disallow only the portion of cost incurred solely because of such non-compliance, rather than rejecting the entire subcontract cost, reflecting a proportionate and fair approach.

In assessment, the *PM* requires reliance on payment evidence, such as subcontract payment schedules, invoices, certificates and records of work completed. The *PM* should assess payments based on forecast Defined Cost so as not to disrupt cash flow, while maintaining the option to adjust subsequently. The *Contractor* should clearly identify and correctly net off contra charges and back charges to avoid double payment. Where variations, missing items or claims arise under subcontracts, the *Contractor* should provide clear justification and state its principles of assessment for review. To facilitate the assessment of the final payment, the *PM* should actively work with the *Contractor* to progressively conclude the account finalisation of each subcontract after the completion of the subcontract works.

> Overall, good practice in assessing Defined Cost for Subcontractors focuses on early engagement, transparent procurement, evidence-based verification and proportionate treatment of Disallowed Cost. By facilitating clear procedures, timely feedback and regular financial dialogue, CEDD and the *PM* support NEC's collaborative intent, reduce disputes, and ensure that subcontract costs included in Defined Cost represent genuine and contract-compliant expenditure.

3 Financial Matters of Compensation Events

3.1 Overview

CE is a core mechanism under NEC contracts for ensuring that, in short, events not at the *Contractor's* risk are addressed in a timely, fair, and transparent manner with the time and/or financial compensation to the *Contractor* resolved within the contractual timeframes during construction. The Prices, Completion Dates and Key Dates, if any, are to be adjusted by the *PM* upon implementation of each CE assessed using a prospective approach with realistic forecasting, rather than a retrospective approach.

This chapter focuses on the financial aspects of CEs, building on the principles of mutual trust and co-operation as stated in clause 10.2 and supports CEDD's dual roles as the project owner and the facilitator in management of the financial matters of CEs.

3.2 Good practices and practical know-how

3.2.1 Dual roles of project owner and facilitator

Under NEC contracts, CEs are the primary contractual mechanism for adjusting the Prices, Completion Dates and Key Dates arising from changes. The financial aspects of CEs therefore have a direct and material influence on project cost certainty, cash flow and dispute risk. To support the financial management of CEs, CEDD performs dual and complementary roles as both project owner and facilitator with key duties as illustrated below:

Project owner's key duties:

- ensuring the financial consequences of CEs to be:
  - assessed as per clause 63 including the use of prospective approach;
  - based on proper use of Defined Cost, *fee percentage*, risk allowances & assumptions;
  - supported by adequate records and justifiable methodology to ensure auditability and value for money;
  - aligned with the approved scope, funding limits and public accountability requirement; and
  - assessed without undermining cost control or exposing CEDD to unjustified financial risk.

Facilitator's key duties:

- supporting early discussion between the *PM* and the *Contractor* on the financial implications of potential or notified CEs;
- encouraging timely agreement on the *PM's* assumptions, mitigation measures and assessment approaches, where uncertainties exist;
- facilitating resolution of differences in views on quantum, forecasting or entitlement before positions harden;
- helping obtain internal approvals, information gaps or third-party constraints that may delay CE implementation; and
- promoting collaboration as per clause 10.2.

When CEDD effectively performs its dual roles as project owner and facilitator, the financial management of CEs:

- supports early implementation and cost certainty;
- improves predictability of the PWDD and the final outturn;
- reduces the accumulation of unresolved CEs; and
- minimises escalation into disputes.

3.2.2 Pre-CE stage

3.2.2.1 Early warnings and potential CEs

EWs highlight risks that may, in short, adversely affect time, cost or performance. Practically, not every CE before it is materialised should have been discussed in EWMs. However, in accordance with core clause 15, any potential CE with adverse time and/or financial implications, if timely identified via proactive risk management by the *Client*, the *PM* and the *Contractor*, should be covered by an EW followed by collaborative discussions in EWMs in an attempt to mitigate the risks.

Properly managed, EWs help reduce the effect of unavoidable CEs even if they are not able to be eliminated.

3.2.2.2 PM's proposed instructions

The *PM* may issue a proposed instruction under clause 65, which could advance the CE process by requiring the *Contractor* to submit its quotations before the instruction is issued. The process enables the *PM* to refine options, clarify intent, and even shape the scope of the instruction with an enhanced certainty over time and financial implications before it is issued. Should the *Contractor's* quotation be considered in order, it could be accepted by the *PM* to implement the CE at the same time when the formal instruction is issued without triggering another round of quotation submission and assessment.

The following example illustrates a good practice with the use of the *PM's* proposed instruction to secure CEDD's early approval to enable timely implementation of the changes:

Example of Good Practice for Timely Use of the *PM's* Proposed Instruction

Context	ECC Option C contract under roads and drainage category involving a significant change to the design provided by the *Client*.
What was done	• The parties including the *Client* jointly discussed the way forward to expedite the implementation of these changes, followed by the *PM* issued a proposed instruction under clause 65.1 to obtain an early quotation. • Competitive tendering was carried out in advance of the *PM's* confirmation of the required works. • *Client's* approval was obtained promptly with the cost certainty.
Why it worked	• Reduced delay to commencement of site works. • Enabled informed *Client's* decision-making. • Maintained competitive tender pricing to meet the requirement for Defined Cost under clause 52.1.
Why this matters	Early cost visibility supports faster and better decisions, particularly where urgent works are required.
Key takeaway	The *Client* supported strategic use of the *PM's* proposed instructions to expedite decisions while maintaining governance.

Proper use of the *PM's* proposed instruction enables early clarification of scope, assumptions and likely cost impact before the instruction is formally issued with the CE notified. This supports the prospective assessment approach, improves reliability of cost forecasting and helps avoid delay-driven cost escalation. When used collaboratively, proposed instructions facilitate early agreement on mitigation measures, streamline internal decision-making and enable earlier implementation of CEs, thereby reducing financial uncertainty and dispute risk.

3.2.3 CE stage

3.2.3.1 ***PM's/Supervisor's instructions, notifications, certifications and changed decisions***

CEs will arise upon instructions, notifications, certifications and changed decisions by the *PM* or the *Supervisor*. To proactively reduce the impacts of the CE, the *PM* or the *Supervisor* should, when considering any potential instruction, notification, certification or changed decision, trigger the EW process with the *Contractor* in an attempt to mitigate the risk by reducing the time and/or financial implication of the CE if unavoidable. Meanwhile, as the dividing date of any of these CEs is the date of the notification of the CE, the communication itself should be issued promptly by the *PM* or the *Supervisor.* The *PM* or the *Supervisor* should avoid issuing communications retrospectively as far as practicable to preserve the proper application of the forecast approach in the CE assessment.

3.2.3.2 ***Notification of CEs***

NEC allows notification of CEs by the *PM* or the *Contractor*. In response to the CNCE, the *PM* should reply within the period for reply without unnecessary and substantial extension, even if agreeable by the *Contractor,* in order to promote the timely implementation of the CE.

- **8-week time bar to the CNCE**

  For CEs other than that arising from the *PM* or the *Supervisor* giving an instruction or notification, issuing a certificate or changing an earlier decision, if the *Contractor* has failed to notify a CE within 8 weeks of its becoming aware of the event that happened (i.e. an 8-week time bar), there is no change to the Prices, and no delay to the Completion Date or Key Dates.

Clear and timely notification is essential for sound CE administration, particularly involving the determination of the dividing date in accordance with clause 63.1. Cost and time effects are forecast from the dividing date.

If a CE arises from the *PM* or the *Supervisor* giving an instruction or notification or changing an earlier decision, the dividing date is the date of that communication.

Any delay in the notification of a CE by the *PM* or the *Contractor* within the timescale as required in the contract, if applicable, will postpone the dividing date and hence delay the start of the forecast assessment.

3.2.3.3 ***Assessment of CEs***

Assessment of the change to the Prices due to a CE must always be prospective as a contract requirement, based on actual and forecast Defined Cost as assessed at the dividing date, and follow the rules as stated in clause 63.

- **Dividing date and forecast approach**

  The dividing date is used to define a time to separate the application of actual and forecast Defined Cost for assessing the change to the Prices. Further guidelines on the adoption of the prospective assessment approach are provided in the PN/ECC paragraphs 4.4.3.2 to 4.4.3.6 and 4.4.4.2.

- **Use of the *PM's* assumptions and the *Contractor's* risk allowance**

  There may be Defined Cost to be incurred due to the CE which, at the time of the assessment, is practically difficult to be forecast (e.g. increase in subcontract tender prices from tendering exercises to be conducted at the later stage of construction due to, for instance, further constraints to be imposed for Providing the Works arising from the CEs concerned). Under this situation, the use of the *PM's* assumptions under clause 61.6 (see section 3.3.1 below) and the *Contractor's* risk allowance under clause 63.8 (see section 3.3.3 below) may be appropriate.

3.2.3.4 ***Submission of quotations – before and after***

Following the *PM's* instruction to submit a quotation, the *Contractor* should submit its quotation within 3 weeks in accordance with clause 62.3. Before and after the submission of the quotation, the *Contractor* and the *PM* should maintain collaborative discussions during financial meetings or other occasions in an attempt to enhance the progress of the CE implementation. Where necessary, CEDD is suggested to actively take part in these working discussions and facilitate collaboration, particularly alleviating the tension between them when disagreement has arisen. Meanwhile, if the works as necessitated by the CE are to be performed by Subcontractor(s), it is always desirable to invite the concerned Subcontractor(s) involved in the preparation of the quotation for the CE.

In response to the *Contractor's* submitted quotation, the *PM* should reply within the period for reply without unnecessary and substantial extension even if agreeable by the *Contractor*, in order to promote the timely implementation of the CE.

3.2.3.5 Delay to Key Dates and Completion Dates

For CEs with both time and financial effects, the assessment of delay to the Key Dates, if any, and the Completion Date (i.e. extension of time (EOT) commonly adopted in Hong Kong) should be addressed before assessing time-related cost items such as prolongation costs. This is because the financial assessment of such items is normally dependent on the period of delay to be assessed under the contract. The assessment of EOT should be carried out by reference to the Accepted Programme current at the dividing date.

In practice, difficulties may arise where there is no recent Accepted Programme, or where no Accepted Programme is in place. This should not be allowed to delay CE implementation unnecessarily. The *PM* and the *Contractor* should work collaboratively to agree on a reasonable programme basis for the CE assessment. The following practical approaches may be considered:

Approach 1: Where the *Contractor* has not submitted a revised programme in accordance with clause 32.2

- The *PM* and the *Contractor* should firstly seek to agree on the programme to be used for assessing the delay.
- The agreed programme should reflect the progress, sequencing, constraints and mitigation measures reasonably foreseeable at the dividing date.
- If agreement cannot be reached, the *PM* should make its own assessment in accordance with clause 64.

Approach 2: Where the *PM* has withheld acceptance of a recent programme submitted by the *Contractor*

- The *PM* and the *Contractor* should review the reasons for non-acceptance and consider whether they materially affect the assessment of the CE.
- If the reasoning for non-acceptance do not affect the assessment of the CE (e.g. identification of delay caused by the CE), the submitted programme may be used as a practical basis for assessment.
- If the reasoning for non-acceptance are material, the *PM* and the *Contractor* should seek to agree on suitable adjustments to the programme for assessment purposes.
- If agreement cannot be reached, the *PM* should make its own assessment in accordance with clause 64.

> As a good practice, CEDD should encourage early dialogue between the *PM* and the *Contractor* on the programme basis for assessing the time effects of CEs, particularly where the latest programme has not been accepted or there is no Accepted Programme in place. This helps avoid delay to CE implementation, supports a fair and auditable assessment of time-related costs, and reduces the risk of disputes arising from programme uncertainty.

3.2.3.6 ***PM's own assessment***

For any CE, if the *Contractor* fails to submit a quotation within the contractual timeframe, or submits a quotation which the *PM* does not accept because its assessment is not considered correct and the *PM* has not instructed the *Contractor* to submit a revised quotation, or for other reasons as stated under clause 64.1, the *PM* is required by clause 64.1 to make its own assessment following the principles as stated in clause 63.

Before the *PM*'s decision to conduct its own CE assessment, the *PM* should firstly conduct a review taking account of, amongst other considerations as appropriate,

- the potential for escalation to disputes as driven by the finality of the assessment of the implemented CE;
- the *PM's* contractual obligation to conduct its own assessment in order not to delay the CE implementation further; and
- the maintenance of the spirit of mutual trust and co-operation with the *Contractor* before reaching a balanced decision in the best interest of the contract.

Inspection by the *Contractor* of *PM's* own assessment before notification

- Although clause 64.3 requires the *PM* to notify the *Contractor* of the assessment of the CE and provide the details at the time of notification, the *PM* should allow the *Contractor* to inspect and comment on the draft assessment before its formal notification. This practice helps uphold the spirit of mutual trust and co-operation and minimises the risk of disputes arising from the *PM's* own assessment.

The following example illustrates a good practice with the application of the *PM*'s own assessment to enable timely implementation of CEs:

Example of Good Practice for Effective Use of the *PM's* Own Assessment

Context	ECC Option C contract requiring expedited implementation of multiple CEs.
What was done	• The Parties recognised that using the *PM's* own assessment could potentially lead to disputes later on, and therefore should be prudent when considering its use under clause 64. With the *Client's* facilitation, there were situations whereby the *Contractor* and the *PM* agreed upfront for the *PM* to conduct its own assessment, instead of requiring further revised quotations from the *Contractor*, so that the CEs concerned could be implemented more quickly. • The *Contractor* confirmed agreement prior to *PM's* notification of its own assessment.
Why it worked	• Preserved contractual rights. • Avoided unnecessary disputes. • Improved implementation efficiency.
Why this matters	• Delayed CE implementation often leads to dispute behaviour. • Pragmatic use of clause 64 unlocks progress without sacrificing fairness.
Key takeaway	The *Client* facilitated communication between the *PM* and the *Contractor* on the use of the *PM's* own assessment, helping expedite CE implementation, minimising risk for potential disputes and compromising the spirit of mutual trust and co-operation.

3.2.3.7 CE involving Contractor's design

CEs involving change in the *Contractor's* design require collaboration amongst CEDD, the *PM*, the *Contractor* and the *Contractor's* designer. A forecast approach is required to assess the cost of the change in the *Contractor's* design, covering the assessment of a "what-if" scenario had the original design been further developed for construction.

Collaboration for agreement with anticipated design details of omitted work

Despite the challenge as often encountered in the assessment involving omitted work items subject to the *Contractor's* design, it is always desirable to conduct working meetings or design review workshops to be participated by the *PM*, the *Contractor* and the *Contractor's* designer to discuss and agree on the anticipated design details of the omitted work items. CEDD is encouraged to participate in these workshops and facilitate the discussions towards the agreement on the anticipated design details of the omitted work items for the CE assessment.

3.3 Topical issues

3.3.1 Issue no. 1 – *PM's* assumptions

The *PM's* assumptions are commonly used in accordance with clause 61.6 when the *PM* cannot reasonably forecast the effects of a CE. These:

- provide a temporary factual basis for the *Contractor's* preparation of its quotation;
- must be objective, measurable, and not related to *Contractor's* performance; and
- if later proven wrong, their correction becomes another CE under clause 60.1(17).

To promote a proper application of the *PM's* assumptions in CE assessments, the following key issues are to be recognised:

- The genuine intention of this application is to ensure the timely implementation of the CEs irrespective of the certainties as may be encountered whilst the forecast assessment approach could in parallel be properly adopted.

  Under normal circumstances, the later a CE is notified, the potential for using the *PM's* assumptions should be reduced as the works and other actions as a result of the CE will become more certain; yet this should not constitute a sound reason to extend the contractual timeframes and assess the CE at a later date.

- The *PM's* assumptions should not be abused in an attempt to bypass the proper application of the prospective assessment approach and/or satisfy with the Health Check KPIs, yet with another anticipated CE upon correction of the assumptions to attempt adjusting the *Contractor's* entitlement under the earlier CE.

- In theory, the *PM's* assumptions can only be stated by the *PM* when they instruct a quotation. In practice, the *Contractor* may wish to propose assumptions to be provided by the *PM*. If further *PM's* assumptions are required, the *PM* shall communicate with the *Contractor*.

The following example illustrates a good practice with the application of the *PM's* assumptions to enable timely implementation of a CE:

Example of Good Practice for Effective Use of the *PM's* Assumptions

Context	ECC Option C contract with a CE involving the deployment of additional site supervisory staff for 24 months yet there might be staff movement before the end of the 24-month period which could not be reasonably forecast.
What was done	• *PM* issued an assumption for the accepted candidate to work for the 24-month period in full under clause 61.6. • CE was implemented promptly despite uncertainty. • Assumptions were later corrected through a further CE when proven incorrect.
Why it worked	• Avoided delay to CE implementation. • Preserved the prospective approach to assessment. • Managed uncertainty transparently.
Why this matters	• Delaying CE assessment due to uncertainty undermines NEC principles. • Assumptions enable timely decisions while preserving contractual fairness.
Key takeaway	The *Client* supported the *PM* in using assumptions appropriately to maintain momentum and reduce dispute risk.

3.3.1.1 ***FAQ***

Why can't we use actual cost for CE assessment if the *Contractor* has already completed the works?

NEC requires a prospective approach. Costs incurred by the dividing date are assessed as actual Defined Cost, while those incurred after the dividing date are forecast. Using hindsight undermines NEC principles and disrupts incentives. The *PM* and the *Contractor* are required to forecast as they would have done at the dividing date. Further guidelines on the adoption of the prospective assessment approach are provided in the PN/ECC paragraphs 4.4.3.2 to 4.4.3.6 and 4.4.4.2.

3.3.1.2 ***FAQ***

When should the *PM* state assumptions?

The *PM's* assumptions should be used when reasonable forecasting is impossible due to unresolved uncertainty. They enable assessment now, with corrections later through new CEs. The following are selected examples of the *PM's* assumptions adopted in CEDD projects:

- A certain proportion of the volume of excavation as necessitated by the CE is rock.
- There is no extra utility diversion as a result of the works imposed by the CE.
- There is no extra modification of temporary traffic arrangement due to the implementation of the works as necessitated by the CE.

3.3.2 Issue no. 2 – People cost

Where effects of a CE are additional people inputs, the CE assessment includes the people cost contributing to the change to the Prices if falling into the cost component for people in the SoCC/Short SoCC. Additional people inputs could be provided by:

- overtime working by existing staff or workers; and/or
- new staff or workers.

The *PM* and the *Contractor* should discuss and agree on the forecast additional people inputs as necessitated by the CE, which is to be covered in the assessment of the change to the Prices, bearing in mind that the costs of additional people working outside the Working Areas, except as stated in the third bullet of the SoCC item 1, are treated as included in the Fee. Without agreement, the *PM* should assess the *Contractor's* additional people inputs based on the assumption that the *Contractor* reacts competently and promptly to the CE and that the Defined Cost for people due to the CE is reasonably incurred in accordance with clause 63.9.

3.3.2.1 ***FAQ***

Are there any simplified assessment approaches to fairly assess additional people cost for CEs?

In accordance with clause 63.2, the *PM* and the *Contractor* may agree to use rates and lump sums in the assessment of a CE. Please refer to the example in section 3.3.4.1 below showing the use of lump sums to assess additional people costs due to a CE in accordance with clause 63.2.

3.3.3 Issue no. 3 – *Contractor's* risk allowances

The *Contractor* may include risk allowances in the forecast portion of Defined Cost. In principle, no risk allowance should be applied to actual Defined Cost for work done by the dividing date. These allowances must only, in accordance with clause 63.8, cover cost and time for matters which have a significant chance of occurring and are not CEs. Under normal circumstances, the use of nominal risk allowance is not acceptable unless supported with sound justification to demonstrate its reasonableness in terms of the significant chance of occurring.

3.3.3.1 ***FAQ***

What risk allowances are reasonable?

Risk allowances must reflect risks with a significant chance of occurring and apply only to the forecast portion of the Defined Cost. Under normal circumstances, nominal risk allowance (e.g. a certain percentage on top of the total Defined Cost) will not be accepted as a justifiable risk allowance for use in accordance with clause 63.8. The following are examples of adopted risk allowances from other NEC contracts:

- The costs for Equipment for additional temporary traffic arrangement as imposed by a CE such as traffic cones and railings, which are allowed based on the average consumption of similar Equipment for other temporary traffic arrangements under the contract.
- Additional costs for power and water consumption due to additional works as necessitated by a CE, which are allowed based on the *Contractor's* historical records on past contracts for the expenditure on power and water consumption relative to the contract sum.
- Wastage percentages of Materials for additional works as necessitated by a CE, which is likely higher than the agreed wastage percentages due to less effective use of the Materials to suit the site conditions (e.g. irregular layout and non-standard size requirement). Similarly, the utilisation percentage of an Equipment is likely lower than the agreed utilisation percentage due to, for instance, disruption to the progress of *works* as affected by a CE.

3.3.4 Issue no. 4 – Use of rates and lump sums

The *PM* and the *Contractor* may, under clause 63.2, agree to use rates or lump sums for assessing the change to the Prices due to a CE. The rates or lump sums are not limited to those included in the Activity Schedule or the Bill of Quantities. Given that the assessment of change to the Prices is primarily based on the Defined Cost approach under clause 63.1, a scenario justifying the operation of clause 63.2 is that the rates or lump sums are at either open market or competitively tendered prices, thereby in effect meeting the requirements for Defined Cost under clause 52.1 at the extra benefit of saving administrative efforts in assessing the Defined Cost.

3.3.4.1 ***FAQ***

When should rates/lump sums be used?

Using agreed rates or lump sums can streamline financial management by reducing reliance on detailed Defined Cost build-ups, particularly where the scope or activity is repetitive, well defined or supported by agreed benchmarks. However, the rates or lump sums to be adopted should represent the open market prices as stated in clause 52.1. This approach could avoid the repetitive administrative efforts spent on assessing Defined Cost based on the supporting details provided by the *Contractor*.

The following example illustrates how rates/lump sums are effectively adopted for assessing additional people costs due to a CE in accordance with clause 63.2:

Example of Effective Use of Rates/Lump Sums for Assessing People Costs

Context	ECC Option C contract under site formation category with multiple CEs involving additional people inputs.
What was done	• Additional staffing inputs for preparing CE quotation anticipated to be comparable to that deployed in earlier CEs under the contract having regard to the scale and complexity of the CE. • Standardised lump sums for additional people inputs were agreed for CE quotation preparation. • Lump sums were derived using Defined Cost principles and benchmarks. • The approach was consistently applied under clause 63.2.
Why it worked	• Reduced repetitive administrative effort. • Preserved auditability and fairness. • Focused discussions on other substantive issues.
Why this matters	• Over-detailed assessments for repetitive Defined Cost items consume resources. • Proportionate approaches improve efficiency without weakening cost control.
Key takeaway	The *Client* supported the use of rates and lump sums for repetitive or well-defined Defined Cost items to improve assessment efficiency.

A further example is to establish an agreed daily cost of the *Contractor's* site overheads based on the Defined Cost for applicable cost components in the SoCC previously assessed in earlier CEs and the *Contractor's* monthly payments for assessing the change to the Prices due to contract prolongation by the EOT granted for the CE.

When applied appropriately, this approach of using rates and lump sums can improve efficiency, enhance predictability of cost outcomes, and reduce the administrative burden on both the *PM* and the *Contractor*, while maintaining auditability and value for money. It also supports the earlier agreement and implementation of CEs, thereby minimising delay-driven cost escalation and dispute risk.

4 Cost-effectiveness Enhancement and Financial Incentivisation

4.1 Overview

The contract framework under ECC/HK places cost-effectiveness enhancement and financial incentivisation at the heart of its contractual philosophy.

In all priced and target contracts, the NEC framework provides structured mechanisms to enhance cost-effectiveness through innovation and efficiency improvements including:

- **Cost Savings Design[1] (CSD)** – It enables the *Contractor* to propose design-led solutions that deliver construction or whole-life cost savings with benefits shared.
- ***Contractor's* proposals under clause 16** – It facilitates *Contractor*-initiated proposals to change the Scope provided by CEDD, which may include improvements to methods, safety, sequencing, or management of the *works* originally stated in the Scope.
- **Operation of secondary Option X30: Innovation and Technology** – It encourages Innovation and Technology Proposals to change the Scope in an attempt to enhance site safety, site supervision or decarbonization, which may in parallel impose cost-effectiveness benefits to the delivery of the *works* as well as the *works* in use.

Operated in target contracts, financial incentivisation is principally delivered through the pain/gain share mechanism, also referred to as the *Contractor's* share. The pain/gain share is intended to promote cost consciousness, transparency and collaborative risk management by ensuring that CEDD and the *Contractor* share the consequences of cost performance in a balanced and predictable manner. CEDD also shares the cost impacts of the *Contractor's* risks.

This chapter focuses on the practical aspects of the cost-effectiveness enhancement covering CSDs and the *Contractor's* proposals under clause 16, and financial incentivisation to be operated under the collaborative working environment. Further, this chapter highlights CEDD performing the dual roles of the project owner as well as the facilitator to support and enhance these processes.

[1] Cost Savings Design is defined under the *additional conditions of contract* (ACC) Clause VII:2 as "the cost savings design proposal for any part of the *works* submitted by the *Contractor* under ACC Clause VII:2 and any amplification or amendment thereto and accepted by CEDD with or without amendments, including, where applicable, any further design which the *Contractor* has to carry out as a result of any amendment to the design required under sub-clause (7) or (8) of ACC Clause VII:3 and/or any change to the *works* for the CSD instructed by the *PM*.

4.2 Good practices and practical know-how

4.2.1 Dual roles of project owner and facilitator

Under NEC contracts, mechanisms such as CSD, *Contractor's* proposals under clause 16 and the pain/gain share mechanism are intended to drive cost-effectiveness, innovation and value-for-money outcomes. These mechanisms do not operate automatically; their effectiveness depends on the active involvement of CEDD throughout the construction stage.

In supporting cost-effectiveness enhancement and financial incentivisation, CEDD performs dual and complementary roles as both project owner and facilitator. The key duties associated with these roles, as outlined below, are to be delivered to help realise potential cost savings while upholding governance, accountability and NEC's collaborative ethos.

Project owner's key duties:

- setting clear value-for-money objectives and performance expectations from the outset;
- ensuring proposed cost saving or incentive-related measures complying with the contract, Scope and prevailing policies;
- assessing the financial integrity of cost saving proposals, including baseline assumptions and longer-term implications;
- maintaining oversight of cost performance under the pain/gain share mechanism;
- ensuring incentives without undermining safety, quality, functionality or whole-life value; and
- providing necessary governance framework within which cost-effectiveness initiatives can be pursued responsibly.

Facilitator's key duties:

- encouraging early identification and discussion of cost-saving opportunities, including CSD and clause 16 proposals;
- supporting open and constructive dialogue between the *PM* and the *Contractor* on feasibility, risk and sequencing;
- facilitating timely internal and external approvals to avoid delay-driven erosion of potential savings;
- helping navigate interfaces or remove constraints outside the *Contractor's* control that may hinder realisation of savings;
- helping convert contractual incentives into real, deliverable cost outcomes; and
- reinforcing collaboration as per clause 10.2.

When CEDD effectively performs its dual roles as project owner and facilitator, cost-effectiveness enhancement and financial incentivisation:

- become integrated parts of day-to-day contract management;
- support improved cost performance and predictability;
- strengthen collaborative behaviours; and
- deliver sustainable value-for-money outcomes in line with NEC.

4.2.2 Cost Savings Design

CSD is a formally governed mechanism designed to promote innovation, productivity and whole-life value, while preserving transparency, accountability and risk balance. A CSD is a *Contractor*-initiated design proposal voluntarily submitted, which CEDD may accept or reject without vitiating the contract. A CSD is delinked from the *Contractor's* proposals under clause 16. Indeed, CSD is a value management tool, and its success depends on early engagement, clear documentation and disciplined assessment.

In each CSD proposal, the *Contractor* should demonstrate not only the anticipated construction cost savings, but also impacts, if any, on time, functionality, productivity, workforce, social benefits and future operation and maintenance costs, assessed on a net present value basis. Before acceptance, CEDD and the *Contractor* should agree the overall assessed cost savings, and where relevant, any consequential adjustment to Completion Dates and delay damages. The *PM* plays a critical management role by confirming compatibility with the Scope, securing CEDD's endorsement, coordinating stakeholders, and communicating the acceptance or rejection decision within the stipulated timeframe. Importantly, ACC Clause VII:2 makes explicit that acceptance of a CSD is not a CE, and rejection does not entitle the *Contractor* to additional payment. Yet, CEDD is entitled to recover the *PM's* costs incurred in assessing rejected proposals.

The financial treatment of CSD differs in priced and target contracts:

- For priced contracts under Option A or B, the Prices are immediately reduced by the full agreed construction cost savings, with the savings shared equally between CEDD and the *Contractor*. The *Contractor's* share is paid only after Completion of the whole of the *works*, net of the *PM's* costs and any increase in future O&M costs.

- For target contracts under Options C and D, the Prices remain unchanged whilst the *Contractor's* benefit is realised through the pain/gain share mechanism at the final share assessment, again after deducting the *PM's* costs and any additional whole-life costs attributable to the CSD.

Under the CSD mechanism, the design risk remains firmly with the *Contractor*. CSD is treated as part of the *Contractor's* design obligations: it is subject to independent checking, certification, professional indemnity insurance, and full liability for defects, abortive works and compliance with the Scope. Any amendments required to correct deficiencies or to ensure proper completion are at the *Contractor's* cost and do not give rise to CEs. Collectively, the CSD mechanism establishes a robust governance framework that encourages innovation without compromising safety, quality or whole-life value, while providing clarity on cost sharing, risk allocation and dispute avoidance for CSD in NEC contracts.

4.2.3 Clause 16.1 *Contractor's* proposals

Other than CSD, clause 16 provides a formal mechanism for the *Contractor* to propose changes to the Scope provided by CEDD, which is in order to reduce the amount to be paid to the *Contractor* for Providing the Works. Clause 16 is intended to impose a collaborative management tool, intended to encourage proactive problem solving and innovation during delivery.

As a fundamental principle, the *Contractor's* proposals are voluntary and *Contractor*-initiated. The *Contractor* bears the cost and risk of developing the proposal, and submission of a proposal does not in itself entitle the *Contractor* to any change to the Prices or Completion Date. The *PM's* role is to assess the proposal objectively against the Scope, programme and CEDD's objectives, and to state clear reasons when acceptance is withheld, enabling constructive refinement rather than adversarial rejection. Meanwhile, acceptance or rejection of a proposal under clause 16 does not vitiate the contract.

Where a *Contractor's* proposal is accepted, the implementation of which requires a *PM's* instruction to change the Scope under clause 14.3, which will give rise to a CE under clause 60.1(1) with the resulting time and financial effects assessed in accordance with clause 63.

Under a spirit of mutual trust and co-operation, it is always a good practice for the *PM* and the *Contractor* to proactively conduct pre-submission discussions and, where necessary, to get CEDD involved. Upon submission of the proposal, the *PM* should consider it promptly within the period for reply, and maintain transparency in decision-making. The *Contractor*, in turn, is expected to ensure that its proposal is fully reasoned, practicable, compliant with statutory and safety requirements, and aligned with the Accepted Programme.

4.2.4 Pain/gain share under target contracts

The pain/gain share mechanism is a central element of the financial management framework under target contracts, which is designed to align the financial interests of CEDD and the *Contractor*, encouraging them to actively manage cost, risk and performance throughout the delivery of the works in a collaborative manner. Despite that, a capped pain mechanism can protect CEDD's financial exposure. The pain/gain share is in effect a behaviour-shaping financial incentive.

4.3 Topical issues

4.3.1 Issue no. 1 – CSD involving a change to the works with its detailed design still subject to development for construction

For a CSD covering a change in design of part of the *works* subject to the detailed design development, the assessment of the anticipated construction cost saving is normally based on the difference in the estimated construction cost for the concerned part of the *works* between:

- the anticipated detailed design had it been fully developed for construction; and
- the CSD should it be accepted and fully developed for construction.

The collaborative working amongst the *PM*, the *Contractor,* and its designer is essential to discuss and agree on the anticipated design details which are not available at the time of considering the CSD proposal. A proper sense of professional judgment, practical reasonableness and cost-effectiveness should be in place since it should not be practical and does not offer any value to the *works* to further develop a design which is no longer required for construction – yet a reasonable level of preliminary or not too advanced design details sufficiently for use to support the estimated cost of the construction is required. Where necessary, collaborative workshops could be arranged for further consideration of the CSD proposal, with CEDD actively participating to support and facilitate the discussions and agreement.

The following example illustrates the assessment of the estimated capital cost saving for CSD to replace the *Client's* design which is originally subject to further changes:

Example of Capital Cost Saving Assessment for CSD Replacing the *Client's* Design

Context	ECC Option C contract under roads and drainage category involving a CSD to replace the *Client's* design with anticipated further design changes.
What was done	• Capital cost savings were estimated using 'what-if' scenarios for the anticipated design development for the CSD and the *Client's* design. • A focused workshop was held to agree on the anticipated design details. • The *Client* facilitated agreement leading to earlier acceptance of the CSD.
Why it worked	• Avoided unnecessary efforts to further develop a design no longer required. • Enabled timely acceptance of the CSD. • Preserved professional judgment.
Why this matters	• CSD benefits could be lost through over-analysis or delay. • Structured collaboration enables timely value realisation.
Key takeaway	The *Client's* active facilitation resolved uncertainties and materialised CSD benefits early.

4.3.2 Issue no. 2 – Adjustment/non-adjustment for the Prices following acceptance of the *Contractor's* proposals under clause 16.1

There is no express provision in clauses 16.1 and 16.2 stating that the Prices are to be reduced following acceptance of a proposal submitted by the *Contractor* that could reduce the amount to be paid to the *Contractor* for Providing the Works. The Prices are not to be revised following acceptance of the *Contractor's* proposal submitted in accordance with clause 16.1 under target contracts (i.e. under Option C or D). However, the Prices are to be revised if the contract is a priced contract (i.e. under Option A or B). The contractual basis for such assessment is explained below:

- Clause 63.12, as a main Option A or B clause, states:

  "If the effect of a compensation event is to reduce the total Defined Cost and the event is a change to the Scope provided by CEDD, which the *Contractor* proposed and the *Project Manager* accepted, the Prices are reduced by an amount calculated by multiplying the assessed value of the compensation event by the *value engineering percentage*[2]."

  Accordingly, the *Contractor* is incentivised by obtaining the shared financial saving with CEDD as represented by the reduction in the Prices included in the implemented compensation event.

- Clause 63.13, as a main Option C or D clause, states:

  "If the effect of a compensation event is to reduce the total Defined Cost and the event is a change to the Scope provided by CEDD, which the *Contractor* proposed and the *Project Manager* accepted, the Prices are not reduced."

  As there is no reduction in the Prices, the target cost as represented by the TOTP remains unaltered. Accordingly, the *Contractor* is incentivised to drive better cost savings in undertaking the works and services as necessitated by the accepted proposal, in an attempt to further enhance the performance of the pain/gain share.

[2] The term "*value engineering percentage*" is defined in the Contract Data Part one. The standard "*value engineering percentage*" adopted in main Options A and B contracts in the Hong Kong public sector is 50%.

4.3.3 Issue no. 3 – *Contractor's* submission and *PM's* forecast of final target and PWDD

Under a target contract with a pain/gain share mechanism, effective cost control depends on a dual and interlinked regime, namely:

- the *Contractor's* obligation to submit transparent, timely and properly supported information on forecasts of the total Defined Cost in accordance with clause 20.4, and

- the *PM's* responsibility for preparing forward-looking forecasts of PWDD and the TOTP for payment, financial control and pain/gain management.

Contractor's Submissions on the Forecast Total Defined Cost

The *Contractor* is required to maintain and submit forecasts on the total Defined Cost to be incurred in Providing the Works. As a good practice, the submission should meet the following key requirements:

- Regular forecast of the total Defined Cost, taking into account costs incurred to date and forecast costs to Completion, which is prepared in collaborative consultation with the *PM*;

- Use of an agreed cost coding system to allow traceability between records, payment applications and forecasts;

- Proper treatment of open market or competitively tendered prices, inventories and accruals; and

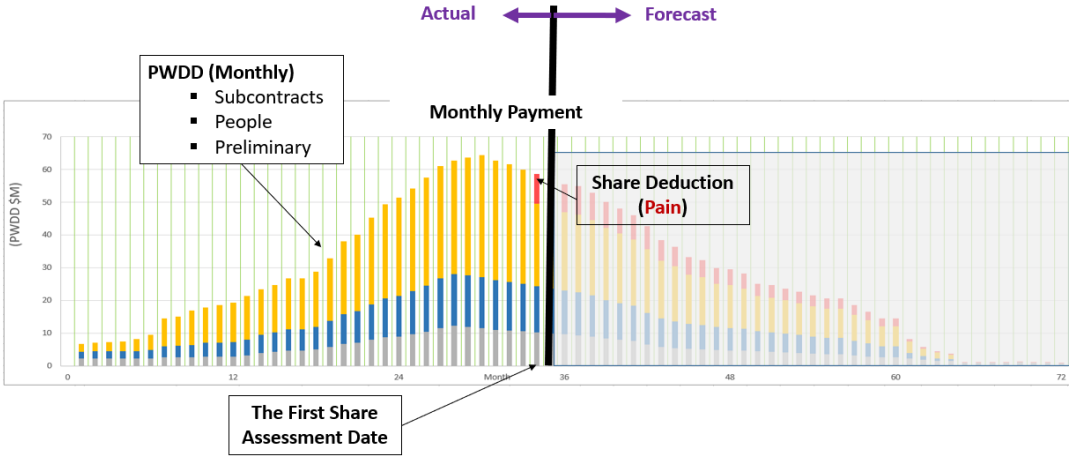
- Timely updating of forecasts to reflect implemented and anticipated CEs, changes in methodology, emerging risks and better forecasting.

The *Contractor's* forecasts, if properly prepared, serve as a forward-looking management tool to facilitate planning of resources for Providing the Works with the requisite cost-effectiveness, which could impose a positive impact on managing the pain/gain share mechanism. Failure to provide credible or timely forecasts undermines EW, increases audit risk and weakens the effectiveness of the target cost mechanism.

PM's Forecast of PWDD and TOTP

The *PM* is obliged under clause 54 to conduct a preliminary assessment of the *Contractor's* share based on the forecasts of the final PWDD and the final TOTP at Completion of the whole of the *works*, followed by a final assessment based on the final PWDD and the final TOTP for inclusion in the final amount due.

Forecasting of *Contractor*'s Share



As a good practice, the *PM* should maintain a forecast of the final PWDD from the *starting date* and should update it regularly to cover the latest certified PWDD, adjusted for forecast Defined Cost to Completion and resulting Fee, whereby the *PM's* professional assessment of the reasonableness of the *Contractor's* forecasts against the progress of the *works*, site records and known risks are duly reflected.

In parallel, the *PM* is required to forecast the final TOTP regularly. The forecast should cover implemented CEs, price adjustment for inflation and any accepted CSD. As a good practice, the forecast should also take due account of any CE pending implementation, potential CE, accepted Defect and uncorrected Defect. Their effects should be consistently reflected in the forecast final PWDD so that the *Contractor's* share is consistently assessed on a fair basis.

The forecast PWDD and the forecast final TOTP, if properly prepared and maintained, function as core governance instruments used to support interim share assessment, financial control, early warning and informed decision making. Meanwhile, the forecast PWDD together with the forecast final TOTP will provide early visibility of emerging pain or gain position, thereby enabling appropriate actions to be formulated and implemented in an attempt to improve the pain/gain performance.

4.3.4 Issue no. 4 – *PM's* interim share assessment

As a standard NEC amendment for use in government target contracts, the *PM's* interim share assessment is intended to provide early financial transparency and disciplined cost control, while avoiding undue disruption to the *Contractor's* cash flow. The interim share assessment is not a final determination of pain or gain, but a forecast-based management tool to signal emerging financial trends and prompt timely corrective action when a pain share situation or, as the case may be, a deteriorating pain/gain share performance is identified.

The contractual basis for interim share assessment is established through clause 54.2A (for Option C) or clause 54.6A (for Option D), which expressly empower the *PM* to make interim assessments of the *Contractor's* share at each *share assessment date*, using forecasts of the final PWDD and the final TOTP based on the *share percentage* and *share range* stated in Contract Data Part one. As the interim assessment is based on forecasts instead of actual outturns, the *PM* must exercise professional judgment rather than adopt overly pessimistic assumptions.

Where an interim assessment indicates a pain share position, the *PM* should inform the *Contractor* promptly and transparently of the assessment and its basis. As the interim pain share is to be deducted from the amount due in the interim payment certificate, the *PM* should not be overly conservative, as an unduly pessimistic forecast may create unnecessary cash flow pressure and impair the *Contractor's* ability to Provide the Works.

> As a good practice, interim pain share assessment should trigger active engagement starting with the *PM* to actively communicate with the *Contractor* on measures that may reduce or mitigate the share deduction, and in any case CEDD's participation should also be encouraged. These may include strengthened cost control, timely and fair assessment of CEs, refinement of forecasts, and collaborative exploration of cost-saving opportunities. Interim share assessment is therefore positioned as a behaviour-shaping mechanism, aligned with NEC's principles of mutual trust and cooperation, rather than a punitive financial control.

4.3.4.1 ***FAQ***

Could a CSD proposal without any proposed reduction to the Prices be acceptable under ACC Clause VII:2?

Yes. A CSD proposal without any proposed reduction to the Prices can be acceptable under ACC Clause VII:2, provided that it satisfies the permitted objectives and governance requirements set out in this clause, and is consistent with the policy intent of DEVB Technical Circular (Works) No. 3/2014. The reasoning is detailed below:

- ACC Clause VII:2 expressly recognises that a CSD may induce financial benefits in different forms, including but not limited to a reduction of the Prices by a lump sum. The clause is deliberately drafted using permissive language "may", making it clear that price reduction is not a mandatory condition for accepting a CSD.

- Sub-clause (1) of this ACC Clause allows a CSD to be accepted where it delivers other recognised benefits, such as improved constructability or efficiency, reduction in construction risk, programme improvement or greater certainty, enhancement of safety, quality, durability or maintainability, and/or improved whole-life performance of the *works*.

- Accordingly, the contractual framework does not require every accepted CSD to include an upfront reduction to the Prices, provided that the proposal delivers demonstrable value consistent with the objectives of the contract.

- Reflecting the policy intent in DEVB Technical Circular (Works) No. 3/2014, a CSD proposal which does not compromise functional, statutory or performance requirements, and has a sound overall value for money case (e.g. with cost savings arising over the life cycle of the works despite no initial capital saving) is acceptable subject to appropriate governance and documentation.

4.3.4.2 ***FAQ***

What are the possible measures to enhance the realisation of estimated cost savings under accepted Cost Savings Design under Option C or D?

Under a target contract using either Option C or D, an accepted CSD does not reduce the TOTP upfront; instead, any benefit to the *Contractor* is realised only through the final pain/gain share after Completion. The operational framework therefore expects the *PM* and the *Contractor* to adopt active management measures to convert estimated savings into actual outturn savings.

The following measures, which are embedded with good management practices, should be considered for adoption to enhance realisation of estimated cost savings under accepted CSD under a target contract:

(i) **Lock in the savings logic at acceptance**

- Define a clear "saving mechanism statement": Identify where the saving arises (e.g. quantities, methods, productivity and/or interfaces) and what must happen operationally for it to materialise.
- Record assumptions explicitly (e.g. programme windows, access, approvals and/or supply chain readiness): This creates a shared reference for later forecasts and avoids dilution of savings through scope creep or unmanaged constraints.

(ii) **Integrate CSD into the Accepted Programme**

- Re-baseline the Accepted Programme: Reflect the CSD's critical steps, interfaces, and dependencies.
- Use EWMs: Manage any threats to the CSD path (e.g. approvals, utilities and/or third party interfaces).

(iii) **Align subcontracting and procurement early**

- Re-package and re-time subcontracts: Suit the CSD method (e.g. specialist sequencing, geography and/or off-site manufacture).
- Market test early where the CSD relies on specialist supply or alternative methods: Avoid late procurement that erodes savings through risk premiums.
- Ensure open market/competitive pricing: Avoid erratic pricing that can negate expected savings.

(iv) **Maintain forecast discipline**

- Require regular, forward-looking forecasts: Check whether the CSD saving logic is still holding.

(v) **Convert design savings into construction control**

- Issue method statements and quality plans aligned to the CSD: Prevent reversion to legacy practices on site.
- Use site audits and hold points: Ensure the adopted method is actually deployed at scale (not partially, which often destroys savings).

(vi) **Protect savings from downstream dilution**

- Control scope drift and interface instructions that undermine the CSD: Where unavoidable, address them promptly via CEs so the CSD saving is not silently eroded.
- Synchronise approvals (e.g. temporary works and independent checking): Avoid idle time that offsets productivity gains.

(vii) **Governance and incentive signalling**

- Discuss CSD performance explicitly in monthly progress meetings and financial meetings: Link delivery discipline to the eventual pain/gain outcome.
- Maintain senior level engagement: Remove obstacles that frontline teams cannot resolve quickly (e.g. land access and third party coordination).

In summary, CSD under target contracts relies on behavioural and operational follow-through rather than immediate price reduction; the likelihood of realising estimated savings increases markedly when the *PM* locks in assumptions, integrates the CSD into programme and procurement, enforces disciplined forecasting, and actively manages interfaces.

4.3.4.3 ***FAQ***

What are the differences between a CSD and a clause 16.1 *Contractor's* proposal?

The key differences are listed below:

Item	CSD	Clause 16.1 *Contractor's* Proposal
1. Does it involve the design of the *works* or any part thereof?	Yes	No
2. Does it require the *PM* to issue an instruction under clause 14.3 to implement the proposed changes?	No	Yes
3. Does it become a CE if the proposal is accepted?	No	Yes [under clause 60.1(1)]
4. Can the proposal include saving in construction time (i.e. earlier Completion Date/Key Date)?	Yes	Not required

4.3.4.4 ***FAQ***

What are the good practices to enhance the pain/gain share performance?

Pain/gain share performance is required to be monitored at the early stage of construction, no matter if a pain or gain situation is anticipated. In the best interests of the contract, CEDD, the *Contractor* and the *PM* should attempt their best endeavours to maximize the gain share or, as the case may be, minimise the pain share or even turn a pain share situation into a gain share situation. To enhance pain/gain share performance, the most effective way is to enhance the cost-effectiveness of Providing the Works.

The following example illustrates some good practices to enhance the pain/gain share performance:

Example of Good Practice to Enhance the Pain/Gain Share Performance

Context	ECC Option C contract under site formation category with a pain situation identified during construction.
What was done	• Early forecasting of the *Contractor's* share was undertaken and shared with full transparency. • Subcontract packaging was optimised to enhance cost-effectiveness of the work delivery. • Cost Savings Design opportunities were actively explored, developed and implemented. • The *Client* proactively resolved external constraints including securing (i) Grade 200 rockfill supply from TM-38 fill bank for completion of a ground stabilisation work and (ii) temporary storge area released from a nearby contractor. • Senior management to jointly review the pain/gain share performance and to help expedite decision-making process. • KPIs were used to drive accomplishment of agreed targets. • Identify saving opportunities, e.g. consolidating the RSS team to minimise efficiency, optimising spending on preliminaries, streamlining approval process of authorities, etc.
Why it worked	• Enabled early mitigation rather than late reaction. • Achieved savings through active collaboration to identify opportunities. • Maintained positivity and motivation despite a pain situation.
Why this matters	• Unmanaged pain situations often escalate into lose-lose scenario for both of the *Client* and the *Contractor*. • Early visibility enables corrective actions while options remain open.
Key takeaway	• Early use pain/gain share forecasts served as active management tools rather than end-of-project outcomes. • Genuine collaboration realised cost saving opportunities. • Senior management involvement drove prompt decision-making and unlocked potential cost savings.

In summary, effective management of the pain share situation depends on early financial transparency, collaborative subcontracting and design optimisation, and strong governance and relationship management, consistent with NEC principles.

Appendix A

Suggested Agenda of Monthly Financial Meeting (for ECC Option C)

1. Minutes of Last Meeting

1.1 Actions taken/ to be taken for last meeting

2. Interim Payment

2.1 Payment Application vs Certified Payment of latest interim payment

**A summary table is suggested as follows:*

IP no.	*Contractor's* Payment Application ($ M)	Certified Payment by the *Project Manager* ($ M)	Difference ($ M)	Major Reasons for the Difference

2.2 Disallowed Cost
2.3 Share Deduction (if applicable)
2.4 Other Cost

3. Forecast Final Total of the Prices

3.1 *Project Manager's* Forecast vs *Contractor*'s Forecast

**A summary table is suggested as follows:*

Item no.	Description	*Contractor's* Forecast ($ M)	*Project Manager's* Forecast ($ M)	Difference ($ M)	Major Reason for the Difference
1	Tendered total of the Prices			-	-
2	Total Cost of Implemented Compensation Events (including Fee)			-	-
3	Total Cost of Compensation Events (to be Implemented, including Fee)				
4	Total Cost for anticipated Compensation Events in the Remaining Period (including Fee)				
5	Actual price adjustment for inflation up to IP no. ____			-	-
6	Forecast price adjustment for inflation from IP no. ____ to final payment				
7	Others (e.g. Adjusted provisional sum under Secondary Options)				
8	Forecast final total of the Prices				

4. Forecast Final Price for Work Done to Date (PWDD)

4.1 *Project Manager's* Forecast vs *Contractor's* Forecast

**A summary table is suggested as follows:*

Item no.	Description	*Contractor's* Forecast ($ M)	*Project Manager's* Forecast ($ M)	Difference ($ M)	Major Reasons for the Difference
1	People				
2	Equipment, Plant, Materials, Manufacture and Fabrication				
3	Subcontractors				
4	Charges				
5	Design				
6	Insurance and Insurance Premium				
7	Disallowed Cost				
8	Fee				
9	Forecast final PWDD				

4.2 Subcontractors (major only)

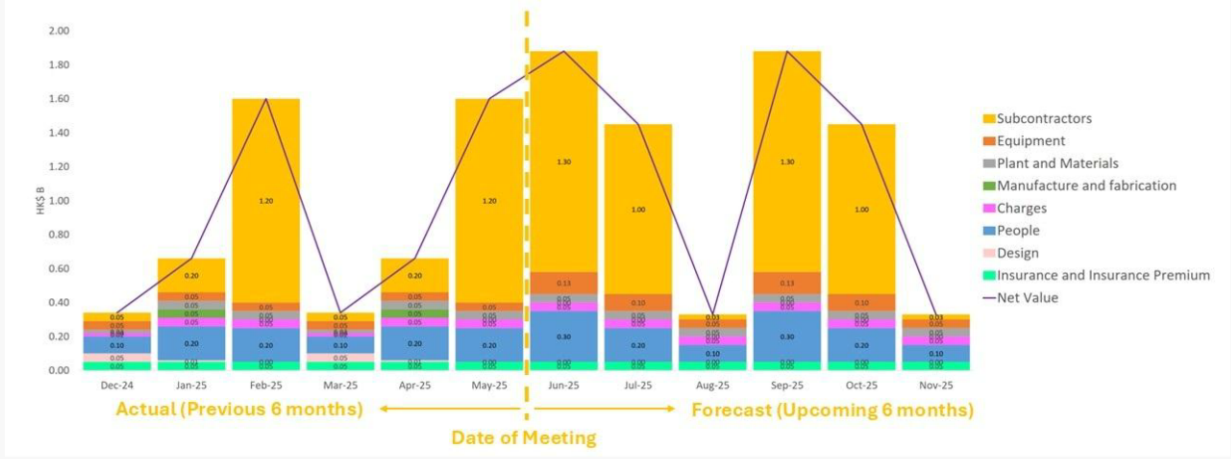
**Summary tables are suggested as follows:*

Item no.	Subcontract	Entitled Payment ($ M)	Issued Payment ($ M)	Outstanding Payment ($ M)	Major Reason for the Outstanding Payment

#Discussion should include any subcontracting issue imposing adverse financial implications.

4.3 Monthly Trend and Analysis

**Bar chart is suggested to be prepared to show the trend of the monthly PWDD. The proportion of each cost component is suggested to be indicated in each bar for the monthly PWDD. A sample is provided as follows:*



#Discussion should be conducted on the abnormal trend of the monthly PWDD or abnormal high proportion of cost component, e.g. substantially increase of the monthly PWDD comparing with the previous months, or people cost taking a relatively high proportion of the total PWDD of the month

4.4 Cost Savings Design
4.5 Total expenditure in Financial Year

5. Gain / Pain Sharing

5.1 *Project Manager's* Forecast vs *Contractor's* Forecast

**A summary table is suggested as follows:*

Item no.	Description	*Contractor's* Forecast ($ M)	*Project Manager's* Forecast ($ M)	Difference ($ M)	Major Reason for the Difference
1	*Contractor's* Sharing				
2	*Client's* Sharing				

5.2 *First Share Assessment Date*
5.3 Effect of Pain Deduction (e.g., *Contractor's* cash flow, payment to Subcontractor and suppler, etc.) and Possible Mitigation in the coming months (for Pain Case only)

6. Compensation Events

6.1 Accepted Compensation Events (CEs)

**A summary table is suggested as follows:*

Item no.	Description	The reporting month	Last month
1	Total No. of implemented CE (A)		
2	Total No. of CE pending for submission of quotation (B)		
	Total (A) + (B)		

#Discussion should be conducted on the new CEs within the reporting month and reminder should be provided to the *Contractor* on quotation submissions for CE which are not yet implemented

6.2 *Project Manager's* Instructions (PMIs)

**A summary table is suggested as follows:*

Item no.	Description	The reporting month	Last month
1	Total No. of registered PMI		
2	Total No. of potential PMI		

6.3 *Project Manager's* Notification of Compensation Event (PMNCE)

**A summary table is suggested as follows:*

Item no.	Description	The reporting month	Last month
1	Total No. of PMNCE		

6.4 *Contractor's* Notification of Compensation Event (CNCE)

**A summary table is suggested as follows:*

Item no.	Description	The reporting month	Last month
1	Total No. of submitted CNCE		
2	Total No. of CNCE confirmed as CE		
3	Total No. of CNCE not accepted by *PM* and *Contractor* agreed		
4	Total No. of CNCE not accepted by *PM* but *Contractor* not agreed		
5	Total No. of CNCE withdrawn		
6	Total No. of CNCE under review		

6.5 Latest Accepted Programme

6.6 Quotations and *Project Manager's* Assumptions

**A summary table is suggested as follows:*

Item no.	Description		The reporting month	Last month
1	Total No. of accepted CE quotation			
2	Total No. of CE quotation under review			
3	Total No. of CE quotation not accepted and pending to *Contractor's* revision			
4	Total No. of CE quotation implemented by *PM's* assessment			
5	Total No. of CE quotation pending to *Contractor's* submission	< 1 month		
6		≥ 1 month ≤ 3 months		
7		> 3 months		

6.7 Forecast Compensation Event

**A summary table is suggested as follows:*

Item no.	*Contractor's* forecast CEs ($ M)	*Project Manager's* forecast CEs ($ M)	Difference ($ M)	Major Reason for the Difference
1				
2				

6.8 Risk mitigations (other than acceleration under paragraph 7 below)

7. Acceleration (if applicable)

7.1 *Project Manager's* proposal
7.2 *Contractor's* proposal
7.3 Quotation

8. AOB

8.1 PMI / CE under vetting by PSGO/ approved by CEDD
8.2 Review of NEC Health check KPIs for DCDE

9. Next Financial Meeting

土木工程拓展署
Civil Engineering and
Development Department