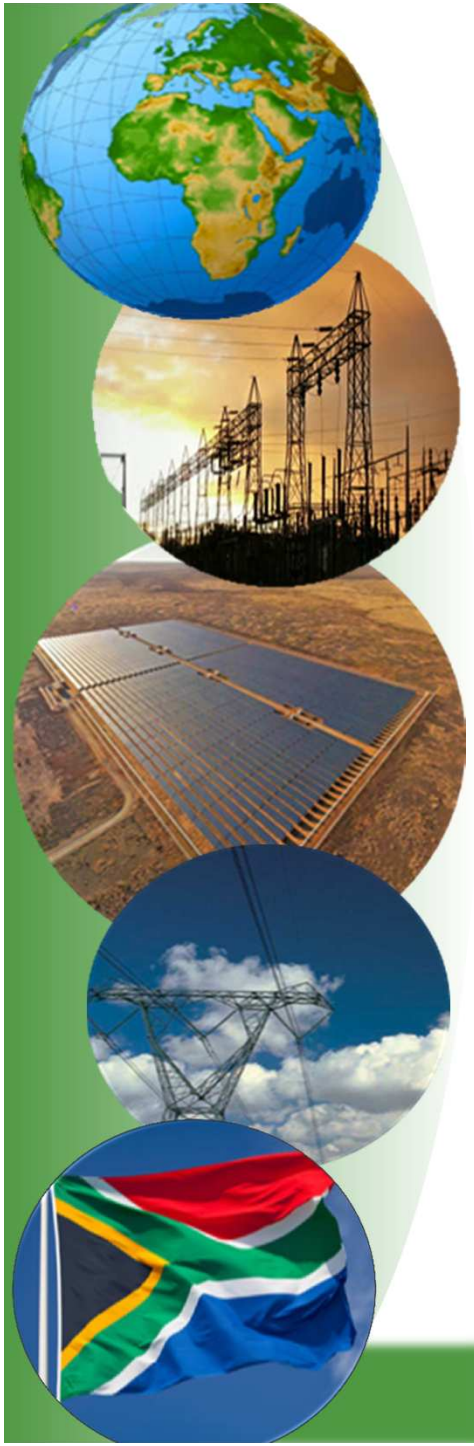

Costs Containment Considerations by Utilities during Implementation of IPP Projects

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Introduction

- The advent of the REIPPPP in South Africa, as per the IRP of 2010, has resulted in the establishment of Power Purchase Agreements (PPAs) between the Seller (each IPP) and the utility's Single Buyer Office (Off-taker/Buyer).
- Accordingly, Deemed Energy Payment (DEP) claims could arise if the PPA terms and obligations are not met.
- In light of this, a study was conducted to explore possible measures that the utility (Eskom) could take to ensure the financial sustainability of its operations into the future.

Background

"**Deemed Energy**" means the energy output that would otherwise be available to the Buyer, but was restricted by either a System Event or a Compensation Event.

- **System Event definition:**

(a) any delay in the connection of the Facility to the System, beyond the contracted date once the Budget Quote Conditions had been met; or

(b) any constraint, unavailability, interruption, curtailment, breakdown, inoperability or failure of or disconnection from, the whole or any part of the System, that is not caused by:

- any natural force or event or an act or omission of the Seller or a Contractor or, for the avoidance of doubt, termination of the Dx Agreement or Tx Agreement by the Distributor or the NTC (as the case may be) due to breach of either such agreement by the Seller;

Background…

- **Compensation Event definition:**

Any material breach by the Buyer of any of its obligations under this Agreement (save for any breach that constitutes a Government Default), including any failure to make any payments due and payable on the due date for payment, to the extent in each case that the breach is not caused or contributed to by the Seller or any Contractor or by Force Majeure, a System Event or Unforeseeable Conduct.

Factors in DEP costs calculation

Three factors:

- Facility tariff (cost/kWh)
- Duration of the event (time of no grid connection)
- Size of the facility (as per contracted MW)

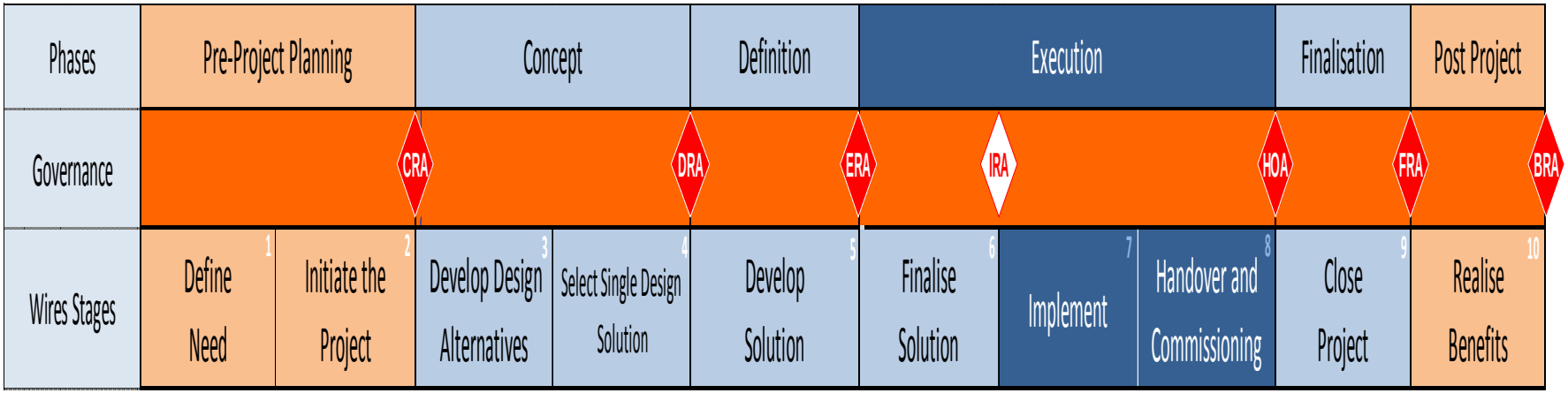
Depending on the above, the exposure in the case of a System Event may amount to millions of Rands.

Salient Features of the SA IPP Process

- Key Stakeholders:
  - IPP (Independent Power Producer) – energy Seller
  - DoE (Department of Eskom) – energy Procurer
  - Utility (Eskom) – Off-taker/ Buyer
- The IPP supplies the contracted energy to the grid.
- DoE controls and manages the bidding process – outcome is pronouncement of preferred bidders and the tariff for each facility.
- Eskom is responsible for network capacity analysis studies, issuance of a grid connection quote and conclusion of purchase agreements (PPAs) and Use of System (UoS) agreements with Tx or Dx.

Eskom's Asset Creation Model

- Eskom utilises the PLCM for the planning, development and execution of its projects.
- The PLCM consists of six phases as shown below.



Methodology

The research methodology assumed an empirical approach to conduct the investigation –

the authors relied on documented post event reports, prescribed process practices together with clarification interviews with relevant stakeholders, where necessary.

Key Principles: Findings from Study

- **Supportive Corporate Objectives (new)**

- Initiatives such as DTCII (Design-To-Cost Two) to not impede IPP Projects – Senior Management to ensure this.

- **Timely Environmental Permits for the Utility's Portion of the Scope of Work (new)**

- IPP to be responsible for the lodging of an environmental application with the Competent Authority tasked with the issuing of environmental authorisation (DEA) – scope to include Eskom and the customer's dedicated portion. This will impact Eskom's capability to execute timeously.

- Eskom could strategically support earlier initiation of environmental application – proposal for Eskom task team working with DoE IPP Office.

Key Principles: Findings from Study…

- **Astute Project Scheduling (modify)**

- Eskom project manager (PM) to ensure that the project schedule accounts for seasonal conditions. Accordingly, execution during rainy seasons to be kept to a minimum.
- Eskom project schedule to be signed off by customer services and PM representatives.
- Prior to the Execution Phase, there shall be an exchange of the project schedules between the utility's project manager and the IPP's representative, with clear indication of at least the completion timelines of the interface milestones between the two parties.

Key Principles: Findings from Study…

- **Co-ordination of Multiple On-Site Contractors Working Simultaneously (adhere)**

- The Eskom PM shall be responsible for co-ordinating the activities of the various contractors to ensure seamless execution of the project scope of work.
- The utility's project manager shall furthermore liaise with the designated IPP representative to ensure that the IPP's contractors do not hamper the activities of the utility's contractors, vice versa.
- Compliance to Health and Safety regulations should be observed at all times to minimise safety related risks to personnel working close to a live chamber. Each contractor's management, namely the utility's project manager and the IPP's representative respectively, shall ensure that its personnel have undergone the applicable safety induction training such as ORHVS (Operating Regulations for High Voltage Systems) prior to working in a high or low voltage environment.

Key Principles: Findings from Study…

- **Conformity to the Contracted Execution Strategy (adhere)**

- The utility shall not deviate from the contracted execution strategy; either purely utility build, customer self-build or a combination of the two. Informal verbal agreements should be avoided into the future. The accountability for this lies with the utility's project manager, on behalf of all applicable disciplines involved in the project development and execution team.

Key Principles: Findings from Study…

- **Procurement Process Alignment (adhere)**

- The utility's procurement office should adhere to the prescribed procurement process, including the appointment of suitably qualified contractors based on their capacity to carry out the contracted works and are of acceptable financial standing.
- This would avoid the construction of "stranded assets", which are both cost ineffective and time consuming, and the need to fast-track projects at ERA stage, thereby increasing the risk of inadequate (poor quality) and costly workmanship.
- The procurement office shall ensure that before a contract is concluded with a service provider, that the contract (NEC3 Engineering & Construction Contract or other kind) contains conditions to deal with pass through costs, deviations and non-conformances.

Note: NEC means National Engineering Contract.

Key Principles: Findings from Study…

- **Designs Scope Sign-Off by the Utility where More Than One Utility Division is Impacted** (modify)

- All asset designs allocated to an IPP shall be signed off for acceptance by the utility's project manager and the responsible utility's design engineer, for each of the impacted utility's divisions. This is so because the third party enters into a contract with one of the divisions and could lose sight of the full interests of the other division(s), thereby adding to project costs and time overruns.

Conclusion

- The study on deemed energy payment claims also provided an opportunity for assessment of the effectiveness of Eskom's current asset creation process.
- The findings indicate that challenges could be experienced during any of the project phases.
- Strict monitoring of compliance to the existing process as well as the adoption of the additional process improvement initiatives is recommended.

Conclusion…

- Subsequently, a practice note document has been developed and accepted for implementation across Eskom's operations as a process improvement mechanism to ensure Eskom's financial sustainability into the future.
- The Practice Note incorporates the changes and improvements discussed earlier.