



Municipal Embedded Generation Pre-feasibility Study Checklist

Preamble

This document is intended to guide municipalities on the criteria needed for a suitable embedded generation project pre-feasibility study. The intention is to use this information as the minimum requirements for the pre-feasibility study to be done by experts, and not to provide information on how to conduct each step. This checklist is based on the work done by the [Alternative Finance for Municipal Embedded Generation Project](#) – funded by [UKPACT](#) and implemented by [ICLEI Africa](#), in partnership with the [Development Bank of Southern Africa](#)

What is a pre-feasibility study?

A pre-feasibility study forms one step in the general project development process (seen in Figure 1.) The aim of a prefeasibility study is to:

1. Provide an initial, low-cost decision on the viability of an embedded generation project
2. Develop a preliminary power project design and investment requirements,
3. Assess the financial viability of the project.

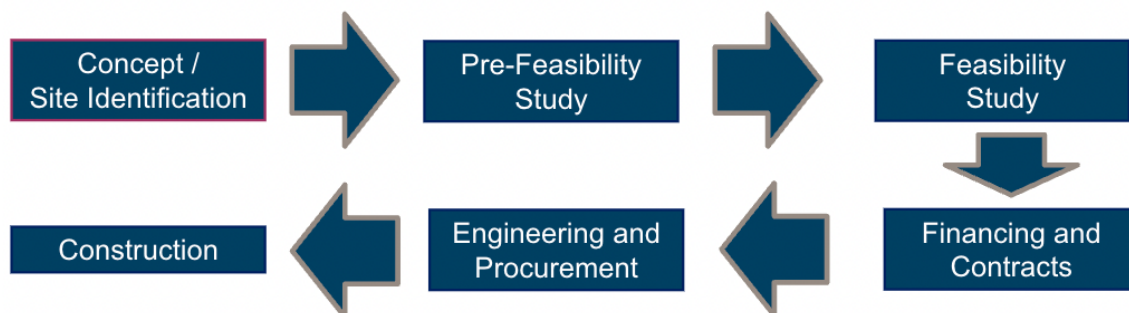


Figure 1: Steps in an embedded generation project development

A certain level of energy planning - aligning with infrastructure plans, municipal development goals as well as available budget - should be undertaken beforehand and inform the scope of the pre-feasibility study to take place. Should the results of the pre-feasibility study be acceptable, a more detailed feasibility study will, in most cases, be needed to accessing funding from investors or lending institution. These could include detailed environmental impact assessments, businesses models, identified power purchases and regulatory approvals.

Municipalities will need to provide data for this assessment to take place. Assumptions will be needed, with suitable reasoning for assumptions, in the case where data is missing. Further, it is prudent to identify potential sources of funding from the initial stages of the project concept and ensure pre-feasibility requirements are aligned with these sources. All embedded generation projects are unique, and additional requirements can be added to a pre-feasibility study to make it relevant to the embedded generation concept.



Embedded Generation Pre-feasibility study Checklist

General	
Definitions and abbreviations are given for all terms and units	
References are provided when using external sources for information	
All assumptions are identified an explanation provided for its use	
Site and Location	
Land coordinates or GIS files for site	
Climate considerations	
Preferred grid connection point	
Access to Site	
Terrain Assessment	
Potential environmental protected areas or hazards near site	
Potential restrictions to natural resources (eg.buildings/trees/overhead lines)	
Technology Assessment <ul style="list-style-type: none"> - Suitable method for choosing technology is provided - Structure/foundation for construction is considered 	
Natural Resource Assessment	
Suitable Meteorological Data <ul style="list-style-type: none"> - Given in monthly breakdown 	
Yield Calculation <ul style="list-style-type: none"> - Using suitable software for calculation - System performance losses are given - Expected yield with a 50 % probability (P50) over lifespan of project - Expected yield with a 50 % probability (P50) over lifespan of project 	
Uncertainties that may affect electricity output	
Electricity Evacuation Analysis	
Loading on identified evacuation line at maximum output	
Calculation of voltage variation on identified evacuation line	
Cost Estimates	
CAPEX Estimate	
OPEX Estimate	
Potential other costs/cost savings (such as demand reduction)	

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