

# Major Customer Connection Process

Steady State Study Self-Serve



# What is Steady State Study Self-Serve?

- An option for Customer's to undertake Steady State Studies
- The SWIS Base model can be requested as either pre or post application
- Customer can engage registered service provider's directly to complete the scope.
- Western Power will review the study to ensure it addresses key requirements.



# Steady State Study Self-Serve | Key Benefits

## What's changed?

Steady state studies  
completed exclusively by  
Western Power



Customer can engage  
registered Service Provider's (SP)  
directly to complete the Steady  
State Studies

## Benefits

- Allows customers to progress assessments more rapidly with increased control over the design of facilities.
- Provides customers with greater control over the balance between cost and speed in progressing a connection study.
- Drives consistency and standardisation in the way customer connection studies are performed.
- The time and effort required from WP to prepare the SWIS Base Model for customer self-serve is reduced.
- Improve the customer experience through rapid feedback on network model validity.

# Connection studies | Framework

Steady State	Dynamic			
	RMS		EMT	
🔴 Wide Area	🔴 SMIB	🔴 Wide Area	SMIB	Wide Area

## Study focus & cases

<p>Assessment of below at Min   Max demand:</p> <ul style="list-style-type: none"> <li>• Thermal loading</li> <li>• Voltage step</li> <li>• Voltage range</li> <li>• N-1 &amp; N-1-1</li> <li>• Develop Remedial Action Scheme (if required)</li> </ul>	<ul style="list-style-type: none"> <li>• Min   Max demand</li> <li>• Min   Max Fault level</li> <li>• PQ allocation</li> <li>• Frequency sweep</li> <li>• GPS.R0 compliance (Appendix 12)</li> </ul>	<ul style="list-style-type: none"> <li>• Min   Max demand</li> <li>• Large disturbance (fault)             <ul style="list-style-type: none"> <li>○ Line trip</li> <li>○ Load rejection</li> <li>○ Generator trip</li> </ul> </li> <li>• GPS.R0 compliance (Appendix 12.4)</li> <li>• Tech Rules compliance (Clause 2.2.8)</li> </ul>	<ul style="list-style-type: none"> <li>• Min demand / low SCR</li> <li>• Large disturbance (fault)             <ul style="list-style-type: none"> <li>○ POC</li> <li>○ Busbar</li> </ul> </li> <li>• Small disturbance (step)             <ul style="list-style-type: none"> <li>○ Active power</li> <li>○ Reactive power</li> <li>○ Voltage</li> <li>○ Power factor</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Min demand / low SCR</li> <li>• Large disturbance (fault)             <ul style="list-style-type: none"> <li>○ POC</li> <li>○ Busbar</li> </ul> </li> </ul>
---	--	---	---	--

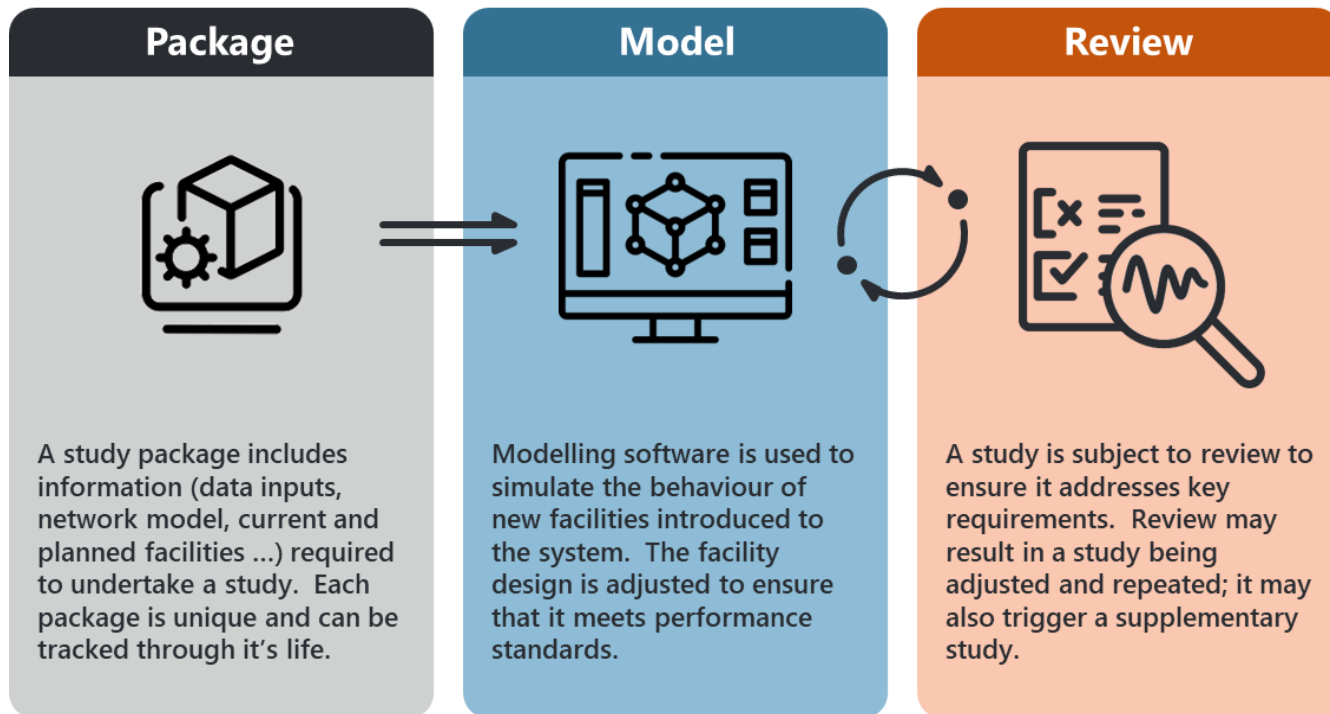
## Typical connection impacts

<ul style="list-style-type: none"> <li>• Thermal – constraint or install equipment (transmission line)</li> <li>• Voltage – install equipment (STATCOM)</li> </ul>	<ul style="list-style-type: none"> <li>• Install equipment (capacitor bank or STATCOM)</li> <li>• Controller retuning</li> </ul>	<ul style="list-style-type: none"> <li>• Controller retuning</li> </ul>	<ul style="list-style-type: none"> <li>• Install equipment (capacitor bank)</li> <li>• Controller retuning</li> </ul>	<ul style="list-style-type: none"> <li>• Controller retuning</li> </ul>
--	--	---	---	---

🔴 Customer self-serve pathway developed

# Steady State Study Self-Serve | Approach

Self-serve connection studies have three steps as illustrated.



# Steady State Study Self-Serve | Suitability Criteria

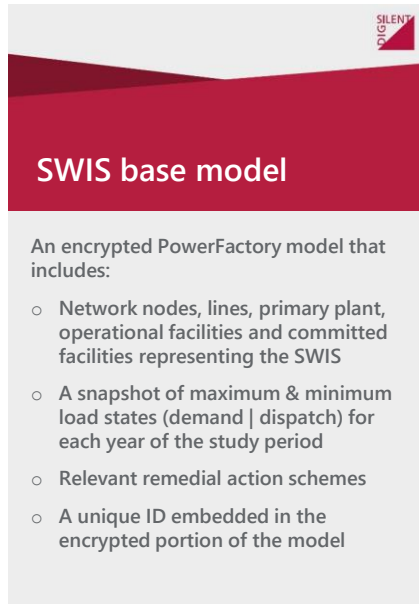
All customers are eligible for the self-serve pathway, however, connection studies with high-levels of complexity that require significant engagement with internal stakeholders (e.g., Network Operations, Engineering & Design) may not be suited to the self-serve pathway – the Western Power Planning Engineer will provide recommendation on suitability. Key considerations to decide the suitability of a connection application for the self-serve study pathway are:

- Will complex remedial action schemes (e.g., RAS, runback) be needed?
- Will upstream network augmentation be needed to support the connection?
- Will commercial or OEM confidential information that cannot be shared with an SP under NDA be needed?



# Steady State Study Self-Serve | Package Overview

For Customers choosing to follow the self-serve pathway, the nominated Service Provider (SP) will be provided a study package subject to return of a signed Terms of Use and/or NDA from the SP. Each study package will have:

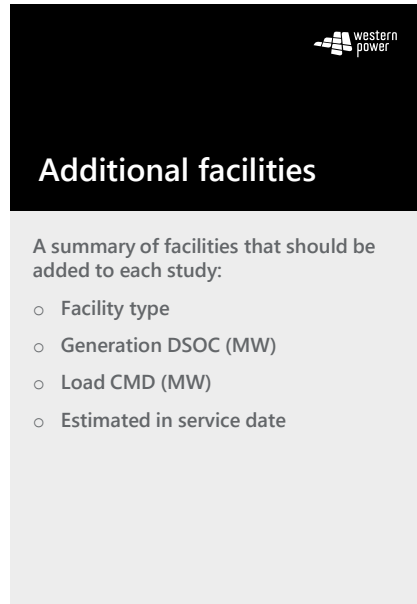


The slide features a dark red header with the 'SILENT DUC' logo in the top right corner. The main title 'SWIS base model' is centered in white text. Below the title, the text describes an encrypted PowerFactory model and lists its components in a bulleted format.

## SWIS base model

An encrypted PowerFactory model that includes:

- Network nodes, lines, primary plant, operational facilities and committed facilities representing the SWIS
- A snapshot of maximum & minimum load states (demand | dispatch) for each year of the study period
- Relevant remedial action schemes
- A unique ID embedded in the encrypted portion of the model

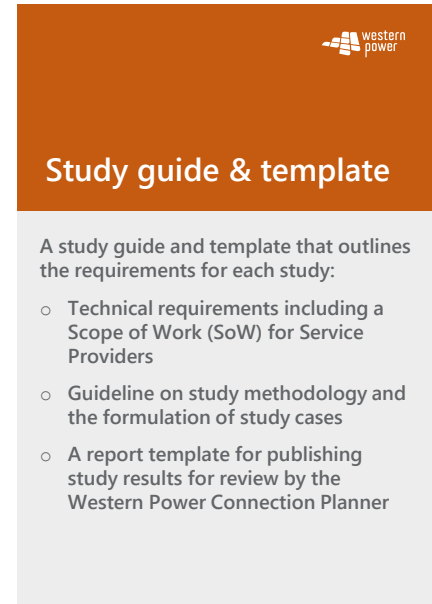


The slide has a black header with the 'western power' logo in the top right corner. The title 'Additional facilities' is centered in white text. The content describes a summary of facilities to be added to each study, listed in a bulleted format.

## Additional facilities

A summary of facilities that should be added to each study:

- Facility type
- Generation DSOC (MW)
- Load CMD (MW)
- Estimated in service date



The slide has an orange header with the 'western power' logo in the top right corner. The title 'Study guide & template' is centered in white text. The content describes a study guide and template that outlines requirements for each study, listed in a bulleted format.


## Study guide & template

A study guide and template that outlines the requirements for each study:

- Technical requirements including a Scope of Work (SoW) for Service Providers
- Guideline on study methodology and the formulation of study cases
- A report template for publishing study results for review by the Western Power Connection Planner

# Steady State Study Self-Serve | Package Inclusion


For Customers choosing to follow the self-serve pathway, the nominated registered Service Provider (SP) will be provided pre and/or post study package. Pre and post application study package will have the following:



## Pre-application

Pre-application package include the following:

- SWIS Base Model (with committed facilities only)
- PowerFactory - Facts Sheet
- Study Guideline
- Study Template



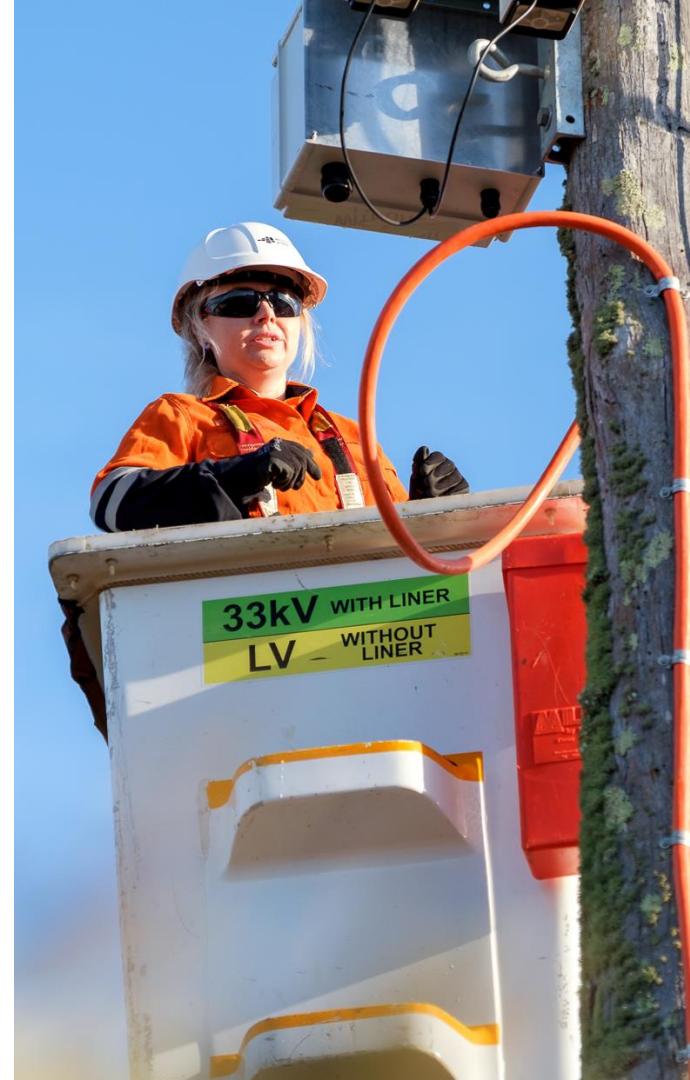
## Post-application


Post-application package include the following:

- SWIS Base Model (with committed and uncommitted facilities)
- PowerFactory - Facts Sheet
- Study Guideline
- Study Template
- Table of Competing Applicants

# What does the customer do if they want to undertake Steady State Study Self-Serve?

- The customer must contact their Senior Access Consultant.
- WP will undertake an assessment of the project and confirm whether Steady State studies can be delivered by the customer.
- WP will confirm the agreed pathway with the customer as part of the Project Delivery Approach (PDA) meeting.
- Once ready to conduct their Steady State study, the customer's selected service provider must submit a request using the [SWIS Base Model request form](#) on the WP website.
- The customer's Senior Access Consultant must confirm there are funds available for GT to complete the Steady State Study Validation.
- If the customer has any questions throughout the Steady State study self-serve process they should communicate via their Senior Access Consultant.





For more information contact  
[network.access@westernpower.com.au](mailto:network.access@westernpower.com.au)