

TG on RCx 2017 Vs TG on RCx 2018 - Summary of Major Amendments

Note:

1. The following summary table includes the major amendments in general for Technical Guidelines (TG) on Retro-commissioning (RCx) 2018 Edition. Please refer to TG on RCx 2018 Edition for the detailed requirements.
2. This serves the purpose of ease of reference only. The Technical Guidelines should take preference over any discrepancy if identified.

	<u>TG on RCx 2017</u>	<u>TG on RCx 2018</u>
Pre-RCx preparation	Not Specified	<p>The content of the section 3 include recommendation on the following information.</p> <ul style="list-style-type: none"> - List of information to prepare upon new project hand over along with the O&M manual. - List of information to prepare and collect for existing building. - Some recommendations on CCMS information (if available) that should be monitored and logged for analysis.
Roles and responsibility of RCx Team	The content listed out the parties that should be part of the RCx team in section 3.1.1	<p>Further expand the content in section on Roles and Responsibilities of RCx team (section 4.1.1) to list out the responsibilities of each RCx team member at different stage of the RCx exercise. The information is listed out in a table format for clearer understanding.</p> <p>Some recommendations on experience for each party are mentioned</p>
Selection of suitable RCx services provider	The content listed out the responsibility of RCx services provider in section 3.1.2	<p>Further expand the content in section on selection of suitable RCx service provider (section 4.1.2) to include a table listing the scenarios to carry out RCx that a building owner can consider engaging a RCx service provider.</p> <p>A table is prepared for clearer illustration of different scenarios.</p>
Data management and central control & monitoring system (CCMS) requirement	Not Specified	Section 4.2.4 explain about the requirements for Central Control Management System (CCMS).

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		<p>The content include information on the followings:</p> <ul style="list-style-type: none"> - Data points (water side system, air side system, energy meters) to collect - Logging interval and logging period - Data format and tagging on essential data points - Proposed data storage arrangement <p>The recommended data points for logging are separated into essential and additional data points to cater for different budget constraint. The essential data points are needed for each CCMS installation and the cost for continuous logging should be factored into the capital CCMS cost.</p>
Conduct initial analysis based on existing central control monitoring system (CCMS) / log sheet data	Section 3.2.4 to recommend CCMS to provide accurate and reasonable data collection to different system.	Section 4.2.5 to provide graphs and schematics example to illustrate the accurate and reasonable data collection.
Collection of trend logged data	Section 3.3.1 to recommend how trend logged data is collected by CCMS or by on-site measurement.	Section 4.3.1 to provide more graphs and schematics to illustrate typically faced problems when dealing with CCMS trend logging, this include out of range data, sensor calibration.
Analyse trend logged data	Section 3.3.2 to recommend RCx team using trend log data to study improvement of equipment operation efficiency.	Section 4.3.2 to provide more graphs and schematics to illustrate how to compare varies data points to discover operation issue.
Setting of measurement and verification method of energy saving opportunities (ESOs)	Section 3.3.4 to recommend carrying out M&V after ESO implementation with the logged data.	Section 4.3.4 to provide M&V methods are available according to international standard and to provide recommendation for selection of the appropriate method.
Performing Measurement and Verification	Section 3.4.2 to recommend flow chart for implementation M&V stage	Section 4.4.2 to recommend content in M&V report for RCx team's consideration.
Conduct training for O&M staff	Section 3.4.5 to recommend provision of training to O&M	Section 4.4.5 to recommend provision of training to O&M staff after RCx with example and

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	staff after RCx with example.	training practice.
Stage 4 – On-going commissioning	Section 3.5 to recommend key performance index (KPI) for continuous monitoring.	Section 4.5 to explain the workflow for ongoing commissioning. A graphical flow chart is provided to illustrate the workflow for ongoing commissioning. The KPIs are explained with an example on regression analysis Suggested actions are proposed for situation where the KPI is drifting away from the expected performance.
Applications of energy modelling in RCx	Section 3.6 to explain on the usage of energy modelling for RCx	Section 4.6 to provide a list of simulation software tool suitable for energy modelling
Information checklist for RCx services provider engagement procurement	Not specified	Annex A in supplementary information to outline the work of scope, responsibilities, expected information and deliverables for RCx service provider engagement procurement preparation.
Technical guidance notes	Not specified	Annex B in supplementary information to provide a summary on commonly faced issues with different system for energy saving opportunities exploration.
Central Control Management System (CCMS) data sample	Not specified	Annex C in supplementary information to explain different data format that is available in the market.