

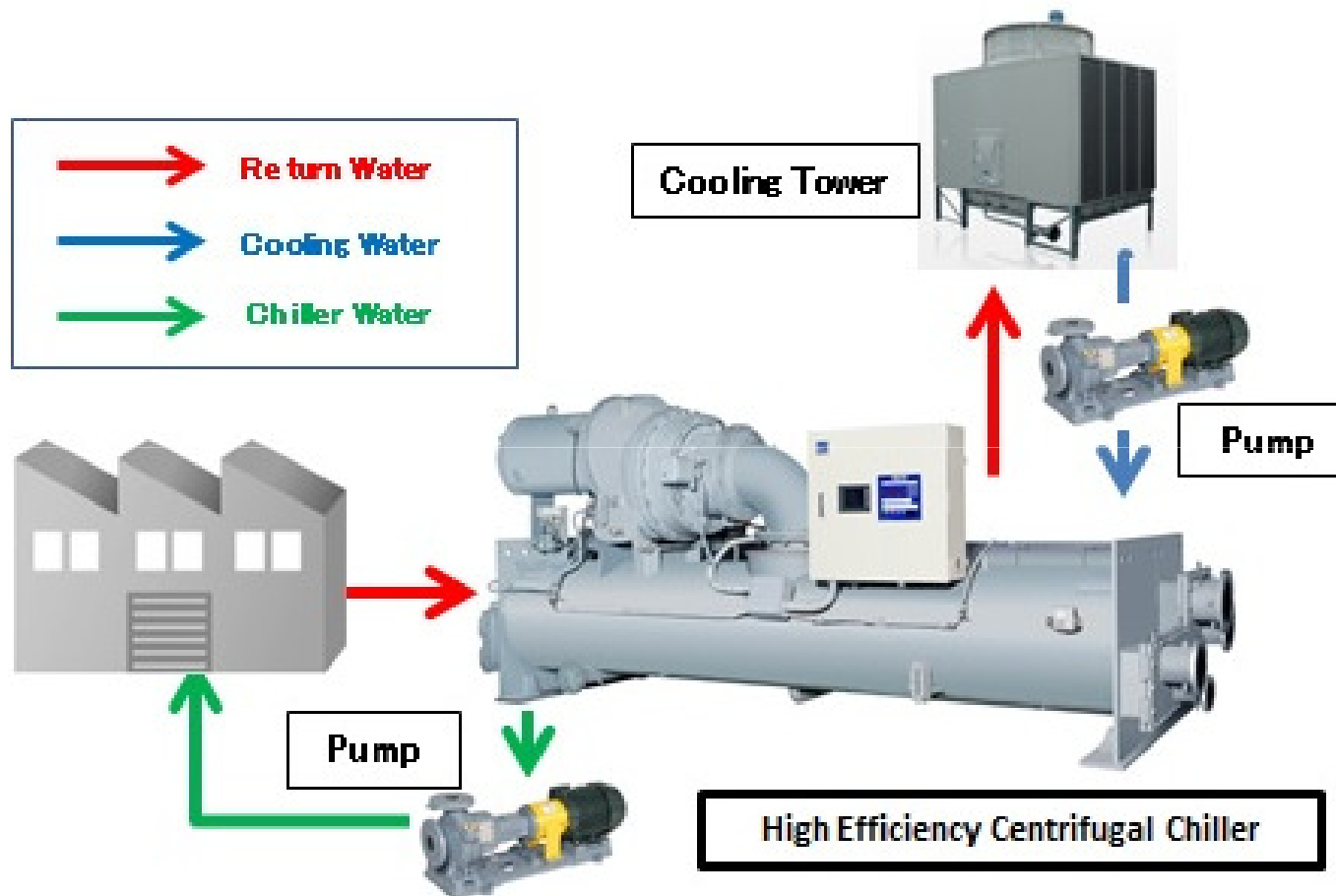


# Case2: Centrifugal Chiller

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# Project Image



# Eligibility Criteria:TH\_PM005

## 5th Proposed Methodology in Thailand

<p><b>Criterion 1</b></p>	<p>Project chiller is a <b>non-inverter</b> type centrifugal chiller with a capacity which is <b>less than or equals to 1,500 USRt</b>.</p>								
<p><b>Criterion 2</b></p>	<p>COP for project chiller <math>i</math> calculated under the standardizing temperature conditions*1 (<math>COP_{PJ,tc,i}</math>) is <b>more than the threshold COP values</b> set in the table below. (“x” in the table represents cooling capacity per unit.)</p> <table border="1" data-bbox="689 930 1834 1171"> <thead> <tr> <th>Cooling capacity per unit [USRt]</th> <th><math>300 \leq x &lt; 500</math></th> <th><math>500 \leq x &lt; 800</math></th> <th><math>800 \leq x \leq 1500</math></th> </tr> </thead> <tbody> <tr> <td>Threshold COP value</td> <td>5.67</td> <td>5.81</td> <td>6.05</td> </tr> </tbody> </table> <p><math>COP_{PJ,tc,i}</math> is calculated by altering the temperature conditions of COP of project chiller <math>i</math> (<math>COP_{PJ,i}</math>) from the project specific conditions to the standardizing conditions. <math>COP_{PJ,i}</math> is derived from specifications prepared for the quotation or factory acceptance test data by manufacturer.</p>	Cooling capacity per unit [USRt]	$300 \leq x < 500$	$500 \leq x < 800$	$800 \leq x \leq 1500$	Threshold COP value	5.67	5.81	6.05
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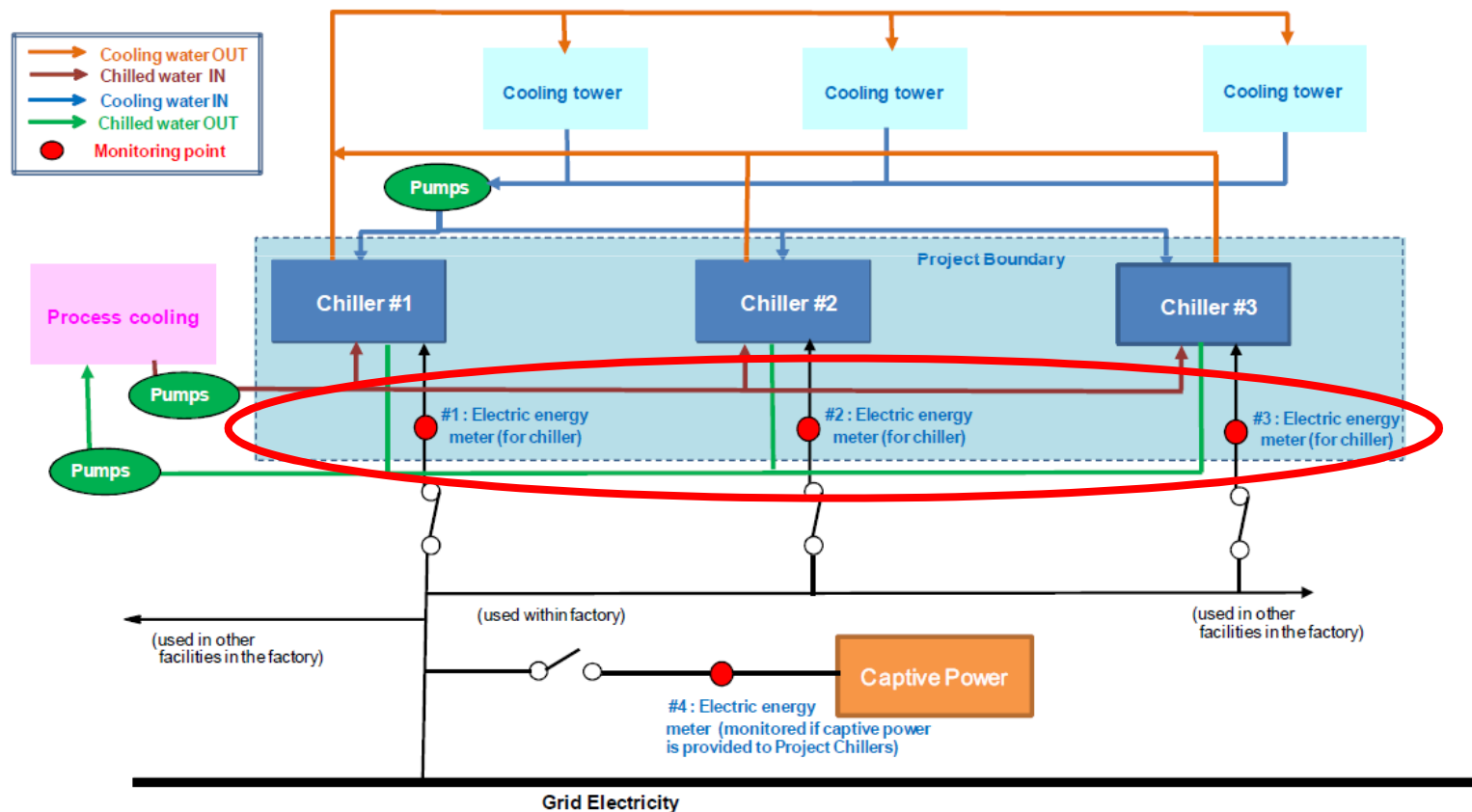
# Eligibility Criteria:TH\_PM005

<b>Criterion 3</b>	<b>Periodical check is planned</b> at least one (1) time annually.
<b>Criterion 4</b>	Ozone Depletion Potential ( <b>ODP</b> ) of the refrigerant used for project chiller is <b>zero</b> .
<b>Criterion 5</b>	<b>A plan for prevention of releasing refrigerant</b> used for project chiller is prepared. In the case of replacing the existing chiller with the project chiller, a plan for prevention of releasing refrigerant used in the existing chiller to the air (e.g. re-use of the equipment) is prepared. Execution of this plan is checked at the time of verification, in order to confirm that refrigerant used for the existing one replaced by the project is prevented from being released to the air.

# Monitoring Parameter: TH\_PM005

**Monitoring parameter is only one** : power consumption of project chiller.  
(if there is captive power use, captive power consumption is monitored.)

## Example

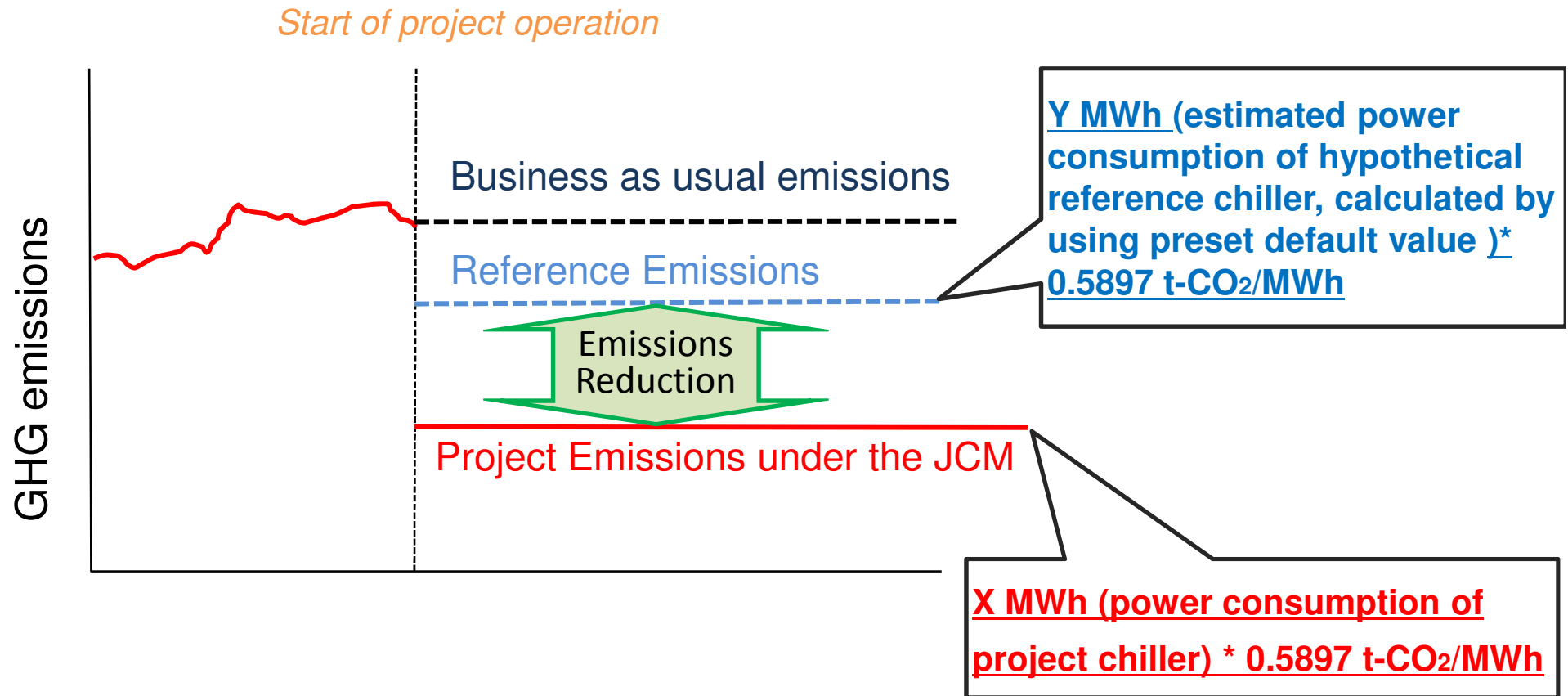


# Emission reductions under TH\_PM005

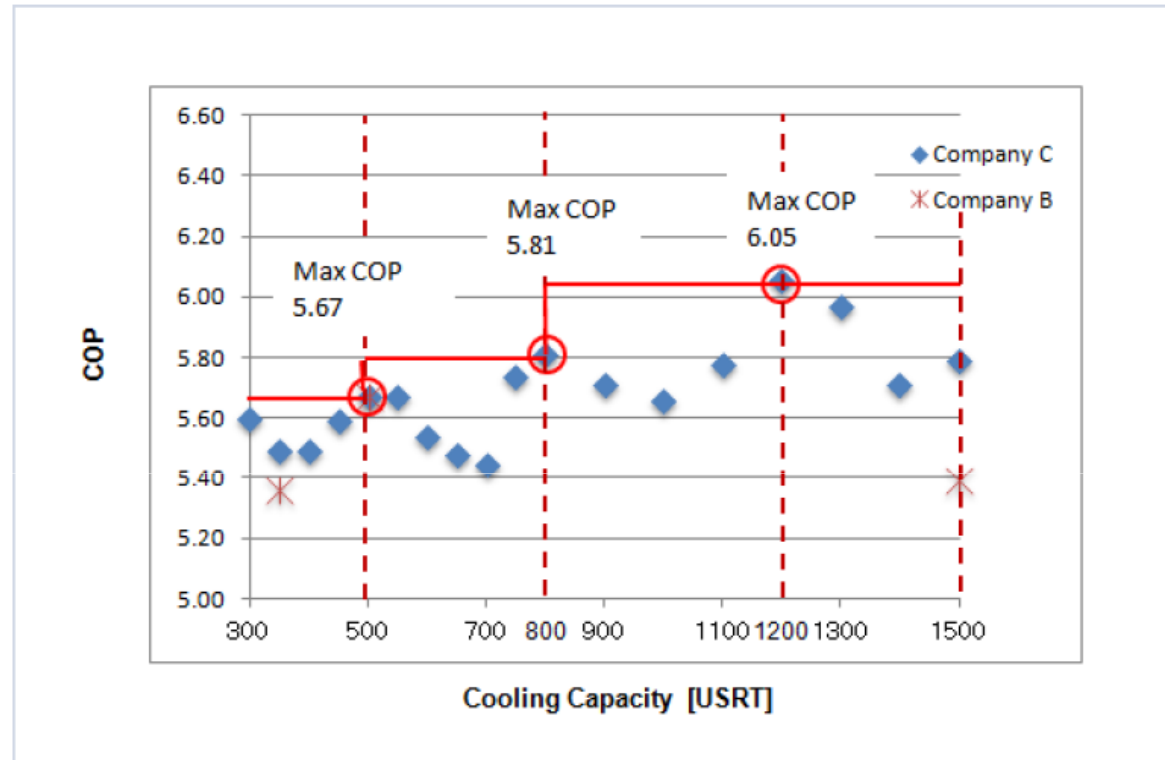
## 5th Proposed Methodology in Thailand

GHG emission reduction measures	This methodology applies to the project that aims for saving energy by introducing <b>high efficiency centrifugal chiller</b> for the target factory, commercial facilities etc. in Thailand.
Calculation of <b>reference emissions</b>	Reference emissions are GHG emissions from <b>using reference chiller</b> , calculated with power consumption of project chiller, ratio of COPs (Coefficient Of Performance) of reference/project chillers and CO <sub>2</sub> emission factor for electricity consumed.
Calculation of <b>project emissions</b>	Project emissions are GHG emissions from using <b>project chiller</b> , calculated with power consumption of project chiller and CO <sub>2</sub> emission factor for electricity consumed.

# Emission reductions under TH\_PM005



# Emission reductions under TH\_PM005



Note 1 : COP values of Company A are excluded since it applies refrigerant of which ODP is not zero.

Figure 1: COP values of centrifugal chillers with non-inverter marketed in Thailand

Source: Additional Information on the Proposed Methodology “Energy Saving by Introduction of High Efficiency Centrifugal Chiller/Non Inverter”