



**NATIONAL STANDARD OF THE  
PEOPLE'S REPUBLIC OF CHINA**

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**Calculation methods for the energy consumption index of  
gas-steam combined cycle cogeneration**

燃气-蒸汽联合循环热电联产能耗指标计算方法

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### Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard was proposed by the China Machinery Industry Federation.

This standard is under the jurisdiction of the National Gas Turbine Standardization Technical Committee (SAC/TC259).

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Gas-steam combined cycle cogeneration

Energy consumption index calculation method

## 1 Scope

This standard establishes the general principle of reasonable electric and heat apportionment for gas-steam combined cycle heat and power generation, and specifies the calculation of energy consumption indicators method.

This standard applies to the calculation of energy consumption indicators for heating conditions of gas-steam combined cycle cogeneration units without supplementary combustion.

## 2 Terms and definitions

The following terms and definitions apply to this document.

### 2.1 Total input heat consumption combined cycle heat consumption

The total heat input through fuel combustion in the gas-steam combined cycle during the statistical period.

### 2.2 Heat consumption for heat supply

The calories consumed by external heating during the statistical period.

### 2.3 Heating cost allocation ratio cost allocation for heat supply

During the statistical period, the cost of heating consumption accounted for the proportion of the total cost.

### 2.4 Combustion chamber exit combustion chamber exergy

The effective energy of the flue gas output by the combustion chamber during the statistical period.

### 2.5 Air compressor exergy consumption

The effective energy consumed to drive the compressor during the statistical period.

### 2.6 The waste heat boiler receives exergy acquired by HRSG

The effective energy that enters the waste heat boiler to provide downstream circulation

during the statistical period.

### **2.7 Upstream gasturbineexergyconsumption**

The effective energy on the upstream side of the combined cycle (before the gas turbine exhaust vent, except for the compressor) during the statistical period.

### **2.8 Exergy ratio for the downstream side**

During the statistical period, the effective energy on the downstream side of the combined cycle (after the gas turbine exhaust port) accounts for the percentage of the entire cycle.

### **2.9 Heat supply ratio heatconsumptionfraction**

The ratio of the heat consumed by heating to the total heat output of the waste heat boiler during the statistical period.