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Guideline for energy systems optimization

能量系统优化导则

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Guideline for energy systems optimization

1 Scope

This Standard gives the basic principles, basic steps and content requirements for energy system optimization.

This Standard is applicable to energy system optimization for all industries and energy users.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 28749, *The method of drawing energy balance network diagram for enterprises*

GB/T 28750, *General technical rules for measurement and verification of energy savings*

GB/T 28751, *The method of editing energy balance table for enterprises*

GB/T 30716, *General rules for energy system performance evaluation*

GB/T 32045, *Guidance on implementation of measurement and verification of energy savings*

3 Terms and definitions

For the purposes of this document, the terms and definitions defined in GB/T 30716 apply.

4 Basic rules for energy system optimization

The energy system optimization shall follow the following principles:

- a) In the case of meeting production needs, take the energy system as the optimization object as a whole; take into account economic benefits and

following principles:

- a) The boundary of each energy component or process within the system shall be clarified;
- b) Boundary division shall ensure the controllability of energy system optimization within the boundary;
- c) When different enterprises are involved in the same energy system optimization project, the system can be divided according to the boundary of the associated enterprise.

7 Status survey and data collection

7.1 Relevant materials and data for status survey and data collection shall meet the needs of system energy analysis and energy opportunity identification, optimization program development, implementation and performance evaluation.

7.2 The collected production and operation data shall be representative, timeliness and consistency.

7.3 Verify and correct collected data and material according to material balance, energy balance and relationship.

8 System energy analysis and energy saving opportunity identification

8.1 System energy analysis

System energy analysis shall include but is not limited to the followings:

- a) From a system-wide perspective, perform energy analysis based on major energy-consuming equipment, processes, and units. Energy system energy balance table and energy balance network diagram can be drawn according to GB/T 28751 and GB/T 28749;
- b) For the energy consumption of main products, procedures, based on energy consumption limit standards, carry out benchmarking analysis. In absence of corresponding specific standards, it shall be benchmarked with advanced levels at home and abroad;
- c) Analyze the main energy medium and evaluate the rationality of energy utilization from the aspects of energy generation, storage, conversion, transportation, distribution, use and recycling. Conduct analysis of

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