

国家电力  STATE POWER

# 电力工程技术改造项目 经济评价暂行办法 (试行)

国家电力公司发输电运营部

## 1 总 则

1.1 为了合理评价国家电力公司电力工程技术改造项目(以下简称电力技改项目)的经济效益和社会环境效益,提高电力技改项目经济评价的质量,实现项目决策的科学化,减少和避免投资决策失误,根据国家计委和建设部颁布的《建设项目经济评价方法与参数》(第二版)和国家有关规定,并结合电力工程技术改造的特点,制定本办法。

1.2 本规定中所说的电力技改项目是指国家电力公司系统内在现有发电和输变电设备的基础上,采用成熟、先进、适用的新技术、新工艺、新材料对电力系统现有的发供电设备和设施进行配套和改造,达到提高企业效益、企业运行的安全性和可靠性以及满足国家相关标准为目的的项目。

1.3 为了保证电力技改项目经济评价工作的质量,必须认真做好市场调研工作,客观分析电力技改项目产生的增量经济效益、增量成本和潜在经济效益。

1.4 电力技改项目经济评价包括财务评价和国民经济评价两部分。财务评价是在国家现行财税制度和价格体系的条件下,计算项目范围内的效益和费用,分析项目的盈利能力、清偿能力,以考察项目在财务上的可行性;国民经济评价是在合理配置国家资源的前提下,从国家整体的角度分析计算项目对国民经济的净贡献,以考察项目的经济合理性。财务评价可行,项目即可行;财务评价不可行、是国民经济评价可行的项目,可向国家提出经济优惠措施建议,使项目具有财务生存能力。

1.5 经济评价中的参数划分为国家参数、行业参数、企业参数和其他参数。国家参数按国家有关规定执行,行业参数由国家经贸委、国家计委和行业主管部门确定,企业参数由企业结合项目特点按实际情况自行确定。



1.6 经济评价应遵守效益与费用计算范围相一致的原则,既要防止疏漏,又要防止重复和扩大计算范围。

1.7 电力技改项目经济评价以动态分析为主,静态分析为辅。计算期包括改造期和生产期。起始年从工程开始施工算起,不包括前期及文件准备时间。改造期按施工组织设计确定;生产期参照项目主要设备经济服务期限或折旧年限确定。

1.8 电力技改项目经济评价主要考察项目为企业整体所创造的新增经济效益和新增费用以及从国家整体角度考虑所产生的新增效益和新增费用。新增经济效益和费用原则上宜采用“有无对比法”进行计算,计算改造与不改造相对应的增量效益和增量费用(本办法以后所见新增一词,均为增量概念),从而计算增量部分的评价指标。必要时,也可计算改造后的有关指标。

1.9 增量经营成本的测算应反映出改造与不改造两种情况的差别。对于与技术改造项目有关的设备的运行和维护费用,应根据设备运行变化情况分析确定。必要时,还应考虑改造期间的停产损失和计算期内设备更新所需要的追加投资。

1.10 电力技改项目的资金来源主要由自有资金,银行贷款以及其他各种资金来源组成。电力技改项目资本金的比例应不低于项目总投资的20%。

1.11 社会折现率和电力工业财务基准收益率是进行国民经济评价和财务评价的重要参数。社会折现率由国家统一测定发布,现为12%;电力工业财务基准收益率暂定为:全部投资的8%或资本金的10%。当项目的财务内部收益率和经济内部收益率分别大于或等于相应的财务基准收益率和社会折现率时,则项目财务上可行,经济上合理。

1.12 根据电力工程技术改造的特点,电力技改项目的效益划分为直接效益和间接效益两大类。可以用货币单位直接度量的效益,称之为直接效益;不能或难以用货币单位直接度量的效益,称之为间接效益。直接效益为主的项目可只进行财务评价。间接效益为主的项目除进行财务评价外,还应进行国民经济评

价,计算经济内部收益率、经济净现值,并采用费用—效用法计算其单位效用费用。

**1.13** 间接效益项目的费用—效用比值,一般应不低于当地同类项目过去三年的平均水平。要尽可能地对间接效益进行定量分析。

**1.14** 承担项目可行性研究的单位应切实保证评价的科学性、公正性和可靠性。

**1.15** 本办法主要适用于国家电力公司系统的发电、输电、变电限额以上技术改造项目,限额以下项目也可参照执行。

**1.16** 电力技改项目经济评价除应执行本《暂行规定》外,还应符合国家及电力行业现行的其他有关标准和规定。

## State Power

### Economical Evaluation Interim Rules of Electrical Engineering Retrofit

#### Projects (Temporary)

##### 1. The Principal

1.1 In order to properly evaluate the economical profit, social profit and environmental profit for Electrical Engineering Retrofit Project of State Power Corporation (following as Electrical Engineering Retrofit Project), improve the economical evaluation quality, achieve the scientific project decision, reduce and avoid mistake on investment decision, while based on the regulation as <Economical Evaluation and Parameters for Construction Project>(2<sup>nd</sup> version) published by State Planning Commission Ministry of Construction and other relative regulations, comprehending with the characters of electrical engineering retrofit project, we draft out this specific regulation.

1.2 The Electrical Engineering Retrofit Project mentioned in this regulation is meaning: through mature, advanced and appropriate new technology and new material, construct supporting facilities and reconstruct on the present power generation device and power supply device in the present electric system, the project could achieve the targets as improving enterprise profits, strengthening the safety and stability for enterprise operation while satisfying relative standards by the government.

1.3 In order to guarantee the evaluating quality, it is necessary to treat the market investigation seriously, analysis the incremental economical profit, incremental cost and potential economical profit caused by electrical engineering project objectively.

1.4 The economical evaluation on electrical engineering retrofit project includes two parts, one is the financial evaluation, and the other is national economic evaluation. The financial evaluation is to calculate the profit and expenses within the project scale under the present taxation system and price system, for analyzing the financial feasibility. The national economic evaluation is to analysis and calculate the net contribution on national economy from the view of total country, under the assumption of proper distribution on national resources, so as to ensure the economic rationality. If the financial evaluation is feasible, the project is feasible; if the financial evaluation is not feasible, while the national economic evaluation is feasible, the project owner could apply for economic favorable policy from the government to make the project financial feasible.

1.5 The parameters in economic evaluation could be divided into national government, industry government, enterprise parameters and other parameters. The national parameters should be used according to relative regulations by central government, the industry parameters should be used according to the regulation published by relative authorities as State Planning Commission, State Economic and Trade Commission and industry competent department.

1.6 When doing the economic evaluation, we should insist the principal as the profit and fee should be calculated in the same calculation scale, which would prevent oversight, repeat and enlarging calculation field.

1.7 The analysis for electrical engineering retrofit project is mainly the dynamic analysis, and also the static analysis method. The calculating period includes retrofitting period and manufacture period. The starting year should account from the year as the project begin to construct, excluding the pre-preparation and document preparing period. The retrofitting period is settled by the construction entity. The manufacture period should be settled down according to the servicing year and depreciating year of the main manufacture device.

1.8 The economical evaluation for electrical engineering retrofit project mainly research on the new added economic profit and new added fees produced by the enterprise, also the new added economic profit and new added fees from the total country view. The principal on calculating new added economic profit and fees should employ “Comparison between the have and not have” method to calculate the increment profit and the increment fee between the retrofitting and not retrofitting, than calculate the evaluating parameters of the increment part. It is also permissible to calculate the relative parameters after retrofitting when it is necessary.

1.9 The calculation of incremental operational cost could reflect the difference between the retrofitting and not retrofitting. As for the device operational and maintenance fee, they should be calculated based on the analysis on device operation changing situation. We should also consider the loss for stop operation and added investment for updating device in calculating period.

1.10 The main capital resources for retrofitting project are the self-owned capital, bank loan and other kind of capital etc. The capital in cash taking accounting of the total investment for this project should not be lower than 20%.

1.11 Social discount rate and the financial benchmark rate in electricity sector are the important parameters when doing national economic evaluation and financial evaluation. The social discount rate is calculated and published by central government, now the rate is 12%, the financial benchmark rate in electricity sector is temporarily as: 8% of the total investment and 10% of the capital cash. When the financial Internal Rate of Return and Economic Internal Rate of Return is higher or equal to the financial benchmark and social discount rate, the project is feasible in finance, and appropriate in economy.

1.12 Based on the characters on technology retrofitting, the profit for this project should be divided into the direct profit and the indirect profit. The profit could be measured by current unit directly is the direct profit, and the profit could not be measured by current directly is the indirectly profit. The project produced the direct profit should only do the financial evaluation; the project mainly produced indirect profit should do the national economy evaluation also besides financial evaluation, to employ the economic internal rate of return, the economic net present value, and fee-profit method to calculate fees per unit profit.

1.13 The cost—profit ratio in the indirect profit project should not be lower than average level of similar project in past three years. The quantitative analysis should be

used on indirect profit to maximum extent.

1.14 The entity in charge of project feasibility study should guarantee the report is scientific, fair and stable.

1..15 this regulation is mainly applicable on the technology retrofit project on power generation, power transmission, and the project exceed the transmission limit. The project below the transmission limit could also use this regulation.

1.16 Besides this regulation, the electrical engineering retrofit project should also comply with other present standards and regulations in electric industry of national government.