

## Annex 1-5

关于信丰县桃江（枫坑口）水电站

### 投资概算增加的说明

江西省赣州市水利电力勘测设计研究院

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## 江西桃江（枫坑口）水电站概算调整报告

### 一、编制说明

我院于2003年9月编制完成《关于信丰县枫坑口（桃江）水利枢纽工程初步设计复核说明》，赣州市发展计划委员会于2003年11月进行了批复，同意该项目沿用初步设计技术方案，且项目投资概算调整为13600万元。桃江水电站于2003年9月开工建设。目前，桃江水电站在土建、设备、移民补偿方面出现较大的变化，项目投资变化较大。因此，我院根据有关规程、规定及项目业主赣州优恩江源电力投资有限公司要求，对桃江水电站工程概算进行调整，现说明如下：

### 1、工程概况

江西桃江(枫坑口)水电站位于江西省赣州市信丰县铁石口镇。坝址位于东经 $114^{\circ}52'$ ，北纬 $25^{\circ}09'$ ，控制流域面积 $3679\text{km}^2$ ，多年平均径流量为 $31.85\text{亿 m}^3$ ，多年平均流量 $101\text{m}^3/\text{s}$ 。水库正常蓄水位174米，总装机容量25MW，年利用小时3116小时，多年平均发电量7790万kWh。

### 2、编制原则及依据

项目划分，费用构成及计算标准，建筑及设备安装工程定额仍按已上报的初步设计复核说明依据进行。

经济评价以概算投资为依据，根据国家计委颁布的《建设项目经济评价方法与参数》（第二版中规定的原则和方法），并参照水利部SL72-94《水利建设项目经济评价规范》及其国家现行财税制度，进行财务评估。

财务评价以水电建设项目财务核算的角度出发，在国家现行的财税制

度和价格下,分析计算项目所需的财务支出和财务收益,评价建设项目的财务可行性。

## 二、概算调整

桃江水电站工程初步设计中确定的项目工程任务及工程规模仍基本适应工程条件,并符合有关要求。现针对桃江水电站土建、设备、移民补偿及相关方面的实际变化,我院按照现行有关规程、规范,在二〇〇三年九月信丰县枫坑口(桃江)水利枢纽工程初步设计复核说明的基础上,进一步对桃江水电站工程概算进行调整。

### 库区移民补偿费用

根据赣州优恩江源电力投资有限公司与信丰县人民政府的约定,桃江水电站库区移民补偿费由信丰县人民政府包干负责,并包干费 3000 万元。但是现在政府要求增加 600 万元移民安置补偿费。西水村中、下坝小组要求对其淹没土地进行补偿,另外需要为移民新村修路及铺设电线,经估算费用约需 630 万元。

### 土建工程

水电站地基开挖到溢流坝段及非溢流坝段设计面时,经检测,地址不符合设计要求。需要继续开挖,直至达到设计标准。此项工程增加石方开挖量约为 121000 立方米及混凝土回填量约为 40000 立方米。经核算,费用需 950 万元。

### 水轮发电机及其他设备

为了满足农村水电站建设要求,桃江水电站采用了四川东方电机股份有限公司生产的水轮发电机组,且配套设备档次做了相应提高。因此,水

轮发电机方面拟增加 1400 万元设备款。同时为了满足现代化水电站“无人值班，少人值守”的行业要求，桃江水电站增设了自动化监控与保护系统和工业电视系统。拟增加 100 万元。

铸钢件配重块增加 180 吨，8 扇弧门增加 50 吨，检修闸门增加 13 吨，尾水事故门增加 58 吨，进水口拦污栅增加 26 吨。材料数量的增加意味着材料费用的增加，材料费用增加 250 万元。

#### 新增工程

新增进厂公路费用 200 万元。

新增厂房装饰费及防洪地等临时工程费用 200 万元。

#### 工期延迟方面

受雨季洪水、厂家设备推迟等综合因素影响，桃江水电站工程建设工期延长。经估算，需增加银行贷款及管理费用 580 万元。

#### 三、设计概算费用增加详表

本次调整后的工程项目总投资为 1.85 亿元，较 2000 年九月信丰县枫坑口（桃江）水利枢纽工程初步设计复核说明增加 4900 万元；年发电量为 7790 万 kWh，动态投资为 7400 元/kW，动态单位电能投资 2.37 元/kWh。具体增加费用见下表：

桃江电站投资概算增加表			
序号	工程项目名称	单位	增加金额
一	库区移民补偿费用	万元	41230
二	土建工程费用	万元	9500
三	材料数量	万元	250

四	发电机组及配套设备	万元	1590
五	新增工程	万元	200
六	新增临时工程	万元	200
七	工期延迟	万元	580
			合计增加 4900 万元

#### 四、经济评价调整

经济评价仍按照初设修订报告中的方法进行，但不进行投资分摊，财务评价基准收益率为 10%。

工程固定资产投资调整为 18500 万元，电站增值税 6%，所得税 33%，经营期 30 年，分析后，上网电价为 0.385 元/kWh。根据江西省发改委颁布的《关于疏导江西电网电价矛盾规范电价管理有关问题的通知》，该上网电价高于平均水平。

# Adjustment Report for the budget of Jiangxi Taojiang (Fengkengkou) Power Station

## 1. Brief instruction of the report

In November 2003, the Developing and Planning Committee of Ganzhou City approved the “The instruction of reviewing the primary design of Fengkengkou (Taojiang) power station of Xinfeng County” which was completed by our institute in Sep 2003. The primary design plan was agreed to be continually adopted in the project and the project budget was adjusted to 136 million Yuan. The construction of Taojiang Power Station started from Sep. 2003.

At present, great changes of construction, equipments and immigrant compensation occur during the construction of Taojiang Power Station which give rise to typical investment change. Therefore, our institute adjusts the budget of Taojiang project as follows in accordance with our regulations and the requirements of the project owner Ganzhou Yuenjiangyuan Power Investment Co., Ltd.

### 1) Introduction of the project

Jiangxi Taojiang (Fengkengkou) Hydro Power Station is located in Tieshikou Town, Xinfeng County of Ganzhou City, Jiangxi Province. The project which lies at east longitude 114°52' and north latitude 25°09' covers a drainage area of 3,679 km<sup>2</sup> with average annual runoff of 3.185 billion m<sup>3</sup> and the average annual flow of 101m<sup>3</sup>/s. The total installed capacity of the station is 25MW and it has a normal reservoir level of 174 m. The reservoir's annual usage time is 3,116 hours and the average annual generation of electricity can approach to 77.90 million kWh.

### 2) The Principal and evidence of the report

Project division, charge composition and calculation criteria, quota of construction and the equipment installation should be executed according to the proposed primary review plan.

The economy evaluation which is based on the budgetary investment is carried out in according to “The methodology and parameters for the economy evaluation for construction project” issued by State Planning Committee and it refers to SL72-94 “The criterion for economy evaluation of Water and Hydroelectric Projects” of Ministry of Water Resources as well as the present national financial and taxation system.

The economy evaluation calculates the expense and income of the project and evaluates the financial feasibility of the project from the angle of the financial accounting of the hydropower station project under the present national financial and taxation system.

## 2. Budget Adjustment

The assignment and the scale of the project construction regulated in the primary design of the Taojiang Power Station still fit project conditions and identify with relevant requirements. Now based on the “The instruction of reviewing the primary design of Fengkengkou (Taojiang) power station of

Xinfeng County” issued in Sep. 2003, we make some adjustments to the budget of Taojiang Power Station project under our present regulation and criterion according to the actual change of construction, equipments and immigrant compensation.

### **Immigrant Compensation**

The government of Xinfeng County takes on thirty million for the immigrant compensation according to the agreement between Ganzhou Youenjiangyuan Power Investment Co., Ltd and Xinfeng Government. However, six million Yuan is required to be added by the government as the immigrant settlement compensation. Land submergence compensation, road and wire building for the immigrant village are demanded by dam working teams of Xishui Town which is estimated to be 5.3 million Yuan.

### **Project Construction**

During the digging course of power station, the geological condition isn't qualified through examination. Digging must be continued until it approaches to the design criterion. 121,000 cubic meters of stone excavation and 40,000 cubic meters of concrete filling are increased in the project which is estimated to cost 9.5 million Yuan.

### **Hydraulic generator and other devices**

To meet the construction requirement of the hydraulic power plant in countryside, Taojiang power Station adopts the hydraulic generator sets produced by Sichuan Dongfang electric machinery corporation, and selects the advanced accessory device. Therefore, fund for the hydraulic generator is to be added to 14 million Yuan. Besides, to meet the modern industrial requirements of “nobody on duty, seldom people monitor”, automation monitoring and protection system and industry television system are added by Taojiang Power Station which will cost 1.9 million Yuan.

The quantities of the following material are added: 180 tons of cast steel component for bob-weight, 50 tons for 8 arc doors, 13 tons for examine strobe, 58 tons for tail water accident door, and 26 tons for trash rack rake in water entrance. The increasing quantity of material make the material cost increase by 2.5 million Yuan.

### **New added projects**

Two million yuan will be added to for the roads to plant.

Two million of temporary project expenses such as Plant decoration fee, flood-proof pool and etc.

### **Delay of the construction period**

The time limited for the project of Taojiang Power Station is postponed because of the flood, delay of equipments and other reasons. It is estimated to add 5.8 million of bank loan and management cost.

### 3. Table for the budget increased

The total investment after the adjustment is 185 million, 49 million more than it is in “The instruction of reviewing the primary design of Fengkengkou (Taojiang) power station of Xinfeng County”. The annual power generation is 77.90 million kWh. The dynamic investment is 7400yuan/kw and the dynamic investment for unit is 2.37yuan/kwh. See the table below for details:

Increased budget for Taojiang Power Station		
No	Items	Increased Amount (RMB in million)
1	Immigrant compensation	11.30
2	Project Construction	9.50
3	Quantity of material	2.50
4	Generator sets and equipments	15.90
5	New added project	2.00
6	New added temporary project	2.00
7	Delay of the construction	5.80
		Total: 49 million Yuan

### 4. The adjustment of economy evaluation

The economy evaluation will be completed via the method in the primary report, but the investment proportion is not adopted. The benchmark IRR for financial evaluation is 10%.

Investment in fixed asset for the project is adjusted to 185 million Yuan. VAT is 6%, income tax for enterprises 33%, lifetime including construction is 30 years. After analysis, inverse calculated tariff is 0.385yuan/ kWh. According to “Notification for regulate the tariff to avoid the conflicts of grid price of Jiangxi power grid” issued by Development and Reform Commission of Jiangxi Province on June 2004, this tariff is higher than average.