Yueqing Chint 150MW Agricultural Photovoltaic Complementary Power Generation Project

Acceptance report of soil and water conservation facilities

Construction unit: Yueqing Chint Photovoltaic Power Generation Co., Ltd.

Prepared by: Zhejiang Jiantou Environmental Protection Engineering Co., Ltd.

February 2022

乐清正泰150兆瓦农光互补光伏发电项目

水土保持设施验收报告

建设单位：乐清正泰光伏发电有限公司

编制单位：浙江建投环保工程有限公司

二〇二二年二月

Yueqing Chint 150MW Agricultural Photovoltaic Complementary Power Generation Project

Acceptance report of soil and water conservation facilities

Responsibility Page

Zhejiang Jiantou Environmental Engineering Co., Ltd.

Division of responsibilities	Responsible Person	Position or title	sign
approve:	Yu Lisheng	Chairman	
nuclear Certainly:	Zhu Song	Deputy General Manager	
Review check:	Fang Pei Zhen	Chief Engineer	
school nuclear:	Jiang Shan	Senior Engineer	
Project Leader:	Jiang Shan	Senior Engineer	
Written by: Zhan Jing (Chapter 1, 8, Appendix) Engineer			
	Tao Ninger (Chapter 2-5, attached pictures)	Assistant Engineer	
	Chen Jing (Chapter 4-5)	Assistant Engineer	
	Zhu Hui (Chapter 6-7)		

Table of contents

Preface

Yueqing Chint 150MW agricultural photovoltaic power generation project is a project of Yueqing Chint Photovoltaic Power Generation Co., Ltd. in Wenzhou.
A construction project in Shenglitangwei District, Yueqing City. It covers an area of about 259.6476hm2 and has an installed capacity of
150MWp, using polycrystalline silicon photovoltaic cell modules as photoelectric conversion equipment, converting current into
The 35kV AC power is connected to the power cable system of the site, and then the voltage is increased to 110kV by the booster station.
The 110KV overhead line "T" is connected to the Longshan-Shenhai line. A total of more than 486,000 solar cell modules were installed in the project;
The inverters used are large centralized inverters, totaling 296 units; 1,660 intelligent combiner boxes; and 148 box-type transformers.
A booster station was built, covering an area of 1.0009hm2. The station management area is equipped with a production auxiliary building and a 35kV distribution room.
The auxiliary building has the main control room and related production rooms, as well as offices, conference rooms, staff dormitories, bathrooms, restaurants,
The construction of photovoltaic power stations can optimize the power supply structure, protect the environment, and promote energy, economy, and environment.
Sustainable development of the environment.

On September 18, 2015, the construction unit signed a lease contract for the right to use state-owned agricultural land with the Yueqing Municipal Agriculture Bureau;
On October 29, 2017, the Yueqing Municipal Development and Reform Bureau issued a notice on the record of the enterprise investment project for this project (Leqing Development and Reform Bureau
On October 11, 2016, the Housing and Urban-Rural Development Bureau of Yueqing City issued the land use plan for this project.

Planning license (Zhejiang Regulation License No. 2016-038200188).

The project was completed in November 2016. During the construction period, no third-party technical service unit was commissioned to carry out water
According to the relevant provisions of the Soil and Water Conservation Law of the People's Republic of China and the relevant provisions of the Wenzhou Municipal Water Administration
The management department requires that this project needs to prepare a soil and water conservation plan report. In January 2021, the construction unit Yueqing Chint Photovoltaic
Power Generation Co., Ltd. commissioned Zhejiang Jiantou Environmental Protection Engineering Co., Ltd. (hereinafter referred to as our company) to conduct the "Yueqing Zhengtai 150
Preparation of the "Soil and Water Conservation Plan Report for the 24-megawatt agricultural-photovoltaic complementary power generation project".

After accepting the commission, our company immediately organized a technical team to conduct on-site investigation and collect information, which was completed in June 2021.
The "Soil and Water Conservation Plan Report for Yueqing Chint 150MW Agricultural-Photovoltaic Complementary Power Generation Project" (draft for review) was completed.

In early June 2020, Wenzhou Water Conservancy Bureau organized experts to review the soil and water conservation plan for this project and formed a review report.
According to the relevant provisions of soil and water conservation and the review opinions, our company modified and improved the plan and submitted the "Yueqing Zheng
"Report on Soil and Water Conservation Plan for Thailand's 150MW Agricultural Photovoltaic Complementary Power Generation Project" (Draft for Approval).

On July 20, 2021, the Wenzhou Water Conservancy Bureau approved the soil and water conservation plan with the document "Wenshui Xu [2021] No. 27".

Approval.

During the construction of the project, the construction unit entrusts the main project supervision unit to be responsible for the soil and water conservation supervision of the project.

It shall appoint supervisors to carry out soil and water conservation supervision, strengthen supervision and inspection, and urge construction units to take measures to prevent and control the possible

In areas with soil erosion, timely soil and water conservation measures should be taken.

During the construction process, we strictly follow the "three simultaneous" system and implement the approval simultaneously with the progress of the main project construction.

Various soil and water conservation measures designed in the scheme. Since the construction started in October 2015, the project has implemented soil and water conservation facilities including agricultural

Farming and technical measures, flood control and drainage projects, vegetation construction projects and temporary protection projects, etc., water

Soil loss has been basically controlled.

At present, the soil and water conservation measures of the project have been basically implemented and put into operation.

The project unit conducted a self-inspection and preliminary inspection, and the overall quality of the project passed the acceptance inspection.

The total water and soil erosion control rate is 99.9%, the soil loss control ratio is 1.7, the slag interception rate is 99.9%, and the forest and grass vegetation is

The restoration rate is 99.99%, the forest and grass coverage rate is 71.51%, and all indicators have reached the prevention and control goals set in the approved soil and water conservation plan.

According to the Notice of the General Office of the Ministry of Water Resources on Issuing the Measures for Supervision and Management of Soil and Water Conservation in Production and Construction Projects (

172 of the Ministry of Water Resources on Further Deepening the Reform of “Delegating Power, Delegating Power and Serving the Whole” and Comprehensively Strengthening the Supervision of Soil and Water Conservation

Opinions on Water Conservation (Shuibao [2019] No. 160), the technical service agency will work with the construction unit to review the quality of the built soil and water conservation facilities.

The survey and evaluation of the water and soil conservation effect and the implementation of management and protection responsibilities were conducted in February 2022.

The "Acceptance Report on Soil and Water Conservation Facilities for Yueqing Chint 150 MW Agricultural Photovoltaic Complementary Power Generation Project" was completed. Main conclusions

The construction unit compiles and submits a soil and water conservation plan in accordance with the law, and carries out subsequent soil and water conservation design, supervision and monitoring work.

The soil and water conservation compensation fee was paid according to law, and the legal procedures for soil and water conservation were complete; the soil and water conservation plan was implemented.

The measures are comprehensive and feasible; the task of soil and water loss prevention and control is completed, and the design and implementation of soil and water conservation measures are in line with the

Relevant regulations and requirements for soil and water conservation; overall achievement of soil and water loss prevention and control goals; follow-up management and maintenance responsibilities for soil and water conservation

The project's soil and water conservation facilities meet the acceptance conditions.

1 Overview of the project and project area

1.1 Project Overview

1.1.1 Geographical location

The project is located in the construction area of Shenglitang North Area, Chengdong Street, Lecheng Town, Yueqing City, Zhejiang Province. The site coordinates are approximately 28°07ÿ30, longitude 121°01ÿ30.

Figure 1-1 Geographical location of the project

The project's geographical location is shown in Figure 1.

1.1.2 Project construction scale

According to the approved water and soil conservation plan, the total installed capacity of the project is 150MWp, and the construction content includes photovoltaic module field, 110kV booster station, collector lines, road projects, etc.

The project uses polycrystalline silicon photovoltaic cell modules as photoelectric conversion equipment, and converts the current into The 35kV AC power is connected to the power cable system of the site, and then the voltage is increased to 110kV by the booster station.

The 110KV overhead line "T" is connected to the Longshan-Shenhai line. A total of more than 486,000 solar cell modules were installed in the project; inverter Zhejiang Jiantou Environmental Protection Engineering Co., Ltd.

The inverters used are large centralized inverters, totaling 296 units; 1,660 intelligent combiner boxes; and 148 box-type transformers.

There is one booster station, covering an area of 1.0009hm2. The management area of the station is equipped with a production auxiliary building and a 35kV power distribution room.

The auxiliary building has the main control room and related production rooms, as well as offices, conference rooms, staff dormitories, bathrooms, restaurants, kitchens,

1.1.3 Project Investment

The actual total investment in the project is RMB 1.50 billion, of which RMB 135 million is for civil engineering, and the construction funds are raised by the construction unit itself.

1.1.4 Project composition and layout

The construction contents of this acceptance include photovoltaic module area (including photovoltaic modules (including support foundation), inverter and box transformer), 110kV booster station, road engineering (in-field roads), and collector lines. The project composition is shown in Table

1.1-1. Table Project composition list

1.1-1 Serial No.	Project composition		Construction content
1	Photovoltaic module area	Photovoltaic modules (including brackets) Base)	A total of 486,000 photovoltaic modules with a single capacity of 310Wp were installed, with a total installed capacity of 150MWp; the photovoltaic support foundation adopts concrete prestressed pipe piles. The
		Inverter and box transformer	inverter and box transformer are located in the photovoltaic matrix plant area, with a total of 148 units configured in container form, each container including 1 box transformer and 2 inverters.
2	110kV booster station		A 2F production auxiliary building, main transformer, SVG, fire sand box, biochemical treatment pool, The accident oil pool, a 2F living building and outdoor GIS, etc. The original state of the
3	Road works	Road access	access road was a mud-bonded gravel road, which was transformed into an asphalt concrete structure during the construction process. It is 2.044km long and 6m wide. The maintenance road in
		On-site roads	the photovoltaic field fully utilizes the existing mud-bonded gravel road.
4	Collector line		In this project, every 15 generating units are connected as one collector line, with a total of 10 lines. The loop line is about 15MWp. The cable trench is 36km long and is laid in a direct buried and four-piece manner.

1.1.4.1 Photovoltaic Module Area

The photovoltaic module area includes: photovoltaic modules (including support foundation), inverters and box transformers.

(1) Photovoltaic modules (including support foundation)

1) Layout of photovoltaic modules

This project uses photovoltaic modules with a single capacity of 310Wp and a single module size of 1957mm×994mm×45mm.

The photovoltaic modules are in the form of 18-piece and 36-piece combinations. A total of 486,000 photovoltaic modules with a single capacity of 310Wp were installed. The installed capacity is 150MWp.

The solar photovoltaic panel components of this project are all laid on the ground, and the solar cell component brackets use fixed brackets.

Solar photovoltaic panels are arranged in two layers vertically, with a steel structure support system underneath to fix the panels.

The angle is 20°.

2) Bracket foundation

The foundation adopts PHC400 prestressed pipe piles according to the geological conditions. There are 23,927 piles in total, with a length of 7.5m.

The surface is 5.5m, with 2m exposed on the natural ground.

(2) Inverter and box-type transformer

1) Inverter and box-type transformer layout

This project adopts the solution of decentralized inversion, local boosting and centralized grid connection, dividing the entire photovoltaic power generation system into 148

The capacity of the grid-connected photovoltaic sub-array is 1.077MWp. Each photovoltaic sub-array is equipped with about 2 500kW grid-connected inverters.

A 1000kVA step-up transformer is used on site to step up the voltage to 35kV.

The project deployed 148 1000 kVA box transformers and 296 500kW centralized inverters on the roadside.

It covers an area of 0.8140hm2.

2) Inverter and box-type transformer foundation

The inverter and box transformer are located in the photovoltaic matrix plant area, with a total of 148 units in container form.

Concrete structure box foundation, reinforced concrete base plate.

1.1.4.2 110kV booster station

The photovoltaic power station is equipped with two 80MVA 110kV step-up transformers and connected to the system with two 110kV lines.

A new 110kV booster station was built in the project, located to the west of the photovoltaic power station. The 110kV power distribution device adopts outdoor GIS type.

The compression station covers an area of 1.0009hm2.

(1) 110kV booster station layout

The booster station is located in Shenglitang District, Yueqing City, Wenzhou. The project includes: a 2F production auxiliary building, main transformer, SVG,

Fire sand box, biochemical treatment pool, accident oil pool, a 2F living building and outdoor GIS, etc.

The southwest corner of the booster station is mainly equipped with outdoor GIS and main transformer. Pebbles and main transformer oil pit are set under the transformer.

The size is 1m larger than the outer contour of the main transformer. The SVG step-down transformer and 35kV switch station are arranged on the north side of the main transformer;

A production auxiliary building and a staff living building are used for office and accommodation of station personnel, and are equipped with sewage biochemical treatment pools,

Auxiliary buildings (structures) such as accident oil tanks.

The buildings in the booster station area include 35kV switch station, production auxiliary building, staff living building, living fire water pool and pump

The structure adopts cast-in-place reinforced concrete frame structure bearing system, and the seismic fortification intensity is

The earthquake resistance level is 6 and the seismic grade is level 4. The foundation adopts PC500 prestressed pipe pile foundation, and the pile foundation bearing layer is ÿ2 clay.

The main transformer frame is about 11.5m high, and the GIS frame is about 10m high. Both use a support structure consisting of steel pipe columns and steel trusses.

The 110kV GIS and transformer foundations are reinforced concrete raft foundations, and the frame foundation is reinforced concrete natural single

The foundation is independent and PC500 prestressed pipe piles are used for ground treatment.

(2) Roads within the station

There is a main entrance and exit on the south side of the station area, and a fire exit and entrance on the west side. The roads inside the station are urban concrete pavement.

The width is 4m, and fire trucks can directly reach all buildings (structures) in the station. The width of the access road to the project is 6m, and the original rural road is considered to be used.

Connected to the provincial road, the access road to the station is a concrete road.

(3) Vertical arrangement

The original elevation of the booster station area is 1.59~2.5m, and the water level at the project site is 259.6476m once in a hundred years.

The outdoor design elevation of the project is 259.6476m, and the indoor design elevation is 3.99m.

After completion, a height difference of 1.5~2.0m is formed with the north, east and south sides, and mortar-laid stone retaining walls are used for protection.

(4) Station drainage The

drainage adopts a domestic sewage and rainwater diversion system. The sewage is mainly domestic sewage, with a sewage volume of about 1.8m3/d.

Domestic sewage is treated in septic tanks and sewage biochemical treatment tanks to meet the standards and is used for greening the production and office building area.

To the existing ditch on site.

(5) Greening within the station

The booster station area adopts a landscape greening method that combines trees, shrubs and grass. The greening rate of the station area is about 20% and the area is about 0.20hm2.

1.1.4.3 Road works

The construction area is a reclamation area. The existing mud-stone road surface in the project area has an elevation of 2.35 to 3.71 m.

The width of the mechanized farming road is 2.5 to 6.5 m.

(1) Access road

The original state of the access road to the station for this project was a mud-bound gravel road surface, which was transformed into an asphalt concrete structure during the construction process.

2.044km, 6m wide, can be connected to the port access road.

(2) On-site roads

The original state of the photovoltaic site is a reclamation area. The existing road network in the project area is well-developed, and the maintenance roads in the photovoltaic site are fully utilized.

There are mud-bound gravel roads. There are drainage ditches on both sides of the existing roads in the field, with rectangular cross-sections and dimensions of 0.6m×0.6m, 0.5m×0.5m,

0.5m×0.4m, 0.55m×0.5m, 0.7m×0.6m, cement concrete structure. 1.1.5 Construction organization and construction period

The total construction period of the project is 14 months. It started in October 2015 and was completed at the end of November 2016.

The construction production area is a temporary building material storage yard, temporary housing, etc. Consider the construction materials entering and leaving the project area.

In order to meet the requirements of construction safety, four construction sites were arranged as construction, production and living areas. The western plot was located near the booster station.

There is one on the north and south sides of the middle plot, and one on the east plot, covering an area of 0.80hm2.

1.1.6 Earthwork

1) Earthwork balance of approved scheme engineering

The total excavation volume of the project is 67,400 m3 , all of which are general earthwork; the filling volume is 95,100 m3 , all of which are general earthwork;

67,400 m3 of earth and stone were excavated for self-use and 27,700 m3 were borrowed , which were general earth and stone materials purchased from legal material yards; no earth and stone was abandoned.

The earthwork balance of the approved scheme is shown in Table 1-2.

2) Actual earthwork balance

The actual total excavation volume was 67,400 m3 , all of which were general earthwork; the filling volume was 95,100 m3 , all of which were

General earthwork; excavation for own use 67,400 m3 , debit 27,700 m3 , for general earthwork, purchased from legal material yards; no

Abandon the square.

The actual earthwork of each item is detailed in Table 1-3. The comparison between the approved earthwork volume and the actual earthwork volume is shown in Table 1-4.

3) Reasons for changes in actual earthwork volume

The project was completed in November 2016. In January 2021, the construction unit commissioned Zhejiang Jiantou Environmental Protection Engineering Co., Ltd. to

The soil and water conservation plan report of this project is compiled. Therefore, the earthwork volume of the soil and water conservation plan approved by the project is the actual earthwork volume of the project.

Raw earth and stone volume.

Table 1-2 Earthwork balance sheet of approved plan Unit: 10,000 m³

Serial number	project		Excavation volume	Filling volume	Self-use	debit		Give up
			General earthwork	General earthwork		General earthwork	source	
1	Photovoltaic panel field	Inverter and box-type transformer basics	0.44	0.44	0.44			
2	110kV booster station			2.05		2.05		
3	Collector line		6.30	6.30	6.30		Legal material yard	
4	Road works			0.72		0.72	Commercial	
total			6.74	9.51	6.74	2.77		0

Table 1-3 Actual earthwork balance sheet Unit: 10,000 m³

Serial number	project		Excavation volume	Filling	Self-use	Debit		Give up
			General earthwork	volume General earthwork		General Earthwork	Source	
1	Photovoltaic panel field	Inverter and box-type transformer basics	0.44	0.44	0.44			
2	110kV booster station			2.05		2.05		
3	Collector line		6.30	6.30	6.30		Legal material yard	
4	Road works			0.72		0.72	Commercial	
total			6.74	9.51	6.74	2.77		0

Table 1-4 Comparison table of earthwork volume approved in the plan and actual earthwork volume Unit: 10,000 m³

sequence Number	project	Comparison results of approved excavation and actual excavation			Comparison results of approved filling and actual filling			Approval of debit and actual debit comparison results		Comparison results of approved abandoned and actual abandoned		
		Subtotal	Subtotal	increase/decrease	Subtotal	Subtotal	increase/decrease	Subtotal	Subtotal	increase/decrease		
1	Photovoltaic panel field inverter and box transformer foundation	0.44	0.44	0	0.44	0.44	0			0	0	0
2	110kV booster station				2.05	2.05	0	2.05	2.05	0	0	0
3	Collector line	6.30	6.30	0	6.30	6.30	0			0	0	0
4	Road works				0.72	0.72	0	0.72	0.72	0	0	0
total		6.74	6.74	0	9.51	9.51	0	2.77	2.77	0	0	0

1.1.7 Land Acquisition

condition

The actual total land area of the project is 259.6476hm2, of which 1.0009hm2 is permanent land for the booster station;

hour

Covering an area of 258.6467hm2, it includes photovoltaic panel field, road engineering collection line and construction site (located on the east side of the project area within the permanent land area).

The total area of the project is shown in Table 1-5.

Table 1-5 Total Project Area Unit: hm²

Land Nature/Type	Project Name		area
Permanent Occupation	110kV booster station		1.0009
Temporary land occupation (leased land)	Photovoltaic panel field	Photovoltaic support foundation	1.20
		inverter and box transformer foundation	0.81
		Photovoltaic area vacant land (recultivation)	249.8067
		Subtotal	251.8167
	Road works		1.43
	Collector line		5.40
	Total		258.6467
	construction sites		(0.80)
total			259.6476

Note: "()" indicates the area within the project land acquisition scope

1.1.8 Demolition (immigration) resettlement and special facility renovation (relocation)

establish

The project does not involve demolition and resettlement work within the scope of land acquisition.

1.2 Overview of the project area

1.2.1 Natural strip

Item

1) Geological earthquake

According to regional geological data, geological structural conditions and analysis of historical earthquakes and modern earthquake activities, there is no

A large regional fault passes through the area, and the historical earthquakes in the area are characterized by small magnitude, weak intensity, and low frequency, making it a relatively stable area.

According to the China Earthquake Motion Parameter Zoning Map (GB18306-2001) (1/4 million), the peak earthquake motion in the project area is

value

The acceleration is 0.05g (g is the acceleration of gravity), the corresponding basic earthquake intensity is VI, and the design earthquake group is

Group 1. It is a poor earthquake-resistant area. The building site category of the site is Class IV.
The shallow silt thickness of the site is large, the engineering properties of the soil are poor, the soil is under-consolidated, has high water content, low strength, and high compression.

The site is a fill area, and the fill site will produce large settlement and differential settlement.

According to the design data, the shallow foundation soil of the site generally cannot meet the requirements of the factory building (structure) for the natural foundation.

Artificial foundation and pile foundation treatment are required. The selection of the bearing layer at the end of the pile foundation should be based on the design load and deformation requirements of the single pile.

Depending on the requirements, the pile end bearing layer can be selected from (3) layer of clay and (4) layer of silty clay mixed with gravel.

2) Topography

The landform of the project site is a Wenzhou coastal siltation plain with a relatively flat terrain. The east canal is to the west of the site.

The site is divided into several irregular blocks by the Xigan River and several roads and bridges, and there are river networks and water areas around the site.

The terrain is open and slightly undulating with a small height difference, ranging from 1.50m to 2.64m.

Before construction, most of the project site was coastal mudflats, ponds, etc., and some areas were piled with construction waste.

Garbage, miscellaneous fill, etc. The vegetation in the site is mainly weeds.

In addition, no karst, landslide, mud-rock flow, collapse, ground subsidence, ground fissures or other unfavorable terrain were found within the survey area.

Quality effect.

3) Weather

This area is located in the southeastern coast of Zhejiang and has a mid-subtropical marine monsoon climate with four distinct seasons throughout the year, mild and humid.

There is abundant precipitation, a small temperature difference between winter and summer, and a long frost-free period.

The annual average temperature in the coastal plain area is 17.9ÿ, the extreme maximum temperature is 37.2ÿ (August 4, 2013), and the extreme minimum temperature is

Temperature -5.8ÿ (1973.12.26), active accumulated temperature ÿ10ÿ is 5561.7ÿ, annual average sunshine hours are 1713.9h, and annual frost-free period is 258d.

The annual average temperature decreases from the coastal plain to the inland mountainous area. The average temperature decreases by 0.55ÿ for every 100m increase in altitude.

The frost period is also reduced by 8-9 days. The average annual rainfall is 1556.3 mm, which varies depending on the terrain, monsoon and sea level.

Due to the influence of the current, the temporal and spatial variations of precipitation are great, the inter-annual precipitation is unbalanced, and wet and dry seasons occur alternately. The main cause of precipitation is frontal precipitation.

The amount of rainfall is closely related to typhoon activity and the length of the plum rain season.

The water volume accounts for 36-44% of the annual volume, becoming the main flood season in the region, with heavy rainfall, often causing major waterlogging disasters.

The typhoon and rainstorm period from July to October is characterized by heavy rainfall and high intensity, accounting for 20-28% of the annual precipitation.

The prevailing wind in winter is from the north, the prevailing wind in summer is from the south, and spring and autumn are the monsoon transition periods, with southerly and northerly winds alternating.

4 According to the water environment functional zoning of Yueqing City, the river water functional zone in the area where this project is located is landscape entertainment and agricultural water use) hydrological

The target water quality is Class III, which does not belong to the drinking water source protection area. There is no drinking water source intake within its basin.

There are no special restrictions or requirements for the construction of the project.

According to the on-site investigation, the east side of this project is the East Canal, with a minimum river width of 160m and a riverbed elevation of -0.25m to -0.65m.

The banks have not been regulated and are natural mud banks. The Xigan River runs through the project area, with a width of 72~150m and natural revetments on both sides.

5) After on-site soil investigation, the site is relatively large and the original land type is coastal tidal flats. The site is covered with a large amount of wetland vegetation.

Some areas are filled with miscellaneous soil. The soil composition of this project site is complex, mainly yellow soil, tidal soil, and saline soil.

There is no peeling topsoil in the eyes.

6) Vegetation

The vegetation of Yueqing City belongs to the mid-subtropical vegetation zone in the vegetation division of Zhejiang Province, the southern subtropical evergreen broad-leaved forest

Due to long-term deforestation, natural vegetation has been severely damaged. Currently, most of the vegetation is cultivated, mainly Pinus massoniana.

Secondary successional vegetation.

According to historical photo data, the vegetation on this project site is mainly weeds.

1.2.2 Soil erosion and prevention The main type of soil erosion in Yueqing City is hydraulic erosion. The total area of soil erosion in the city is 148.57 km2 (mild erosion 25.53 km2, moderate erosion 74.70 km2, strong erosion 30.44 km2, extremely strong erosion 14.09 km2, severe erosion 13.8 km2, and severe erosion 20.9 km2).

The area of soil and water loss in the project area is mainly caused by hydraulic erosion caused by surface runoff.

The main erosion mode is surface erosion, followed by gully erosion. In terms of time, the water in the rainy season from April to June and the typhoon rainstorm season from July to October is the main cause of the damage.

Soil erosion is particularly serious.

According to the investigation and analysis, the soil and water conservation in the project area is in good condition.

The soil erosion modulus background value in the project area is 300/km²•a,

The allowable soil loss in the project area is less than 500t/km²•a, which is a slight erosion area, and the status of soil and water conservation is good.

The statistics of soil and water loss area in Yueqing City are shown in Table 1-6.

Table 1-6 Soil and water loss situation at the project site

Administrative area	No obvious erosion area	Soil erosion area								Total land area
		Mild	Moderate	Strong		Very strong		Subtotal	Ratio	
Yueqing City	1218.53	25.53	74.70	30.44		14.09		148.57	10.87%	1367.10
						3.81				

2 Soil and water conservation plan and design

2.1 Main engineering design

China Energy Engineering Group Zhejiang Electric Power Design Institute Co., Ltd. is responsible for the main project design.

(1) In September 2015, China Energy Engineering Group Zhejiang Electric Power Design Institute Co., Ltd. completed the “Yueqing Chint 150
"Feasibility Study Report on Megawatt Agricultural Photovoltaic Complementary Power Generation Project".

(2) In October 2015, the Development and Reform Bureau of Yueqing City issued a project preparation document in the form of “Lefa Gai Bei [2015] No. 87".

(3) In April 2016, China
Energy Engineering Group Zhejiang Electric Power Design Institute Co., Ltd. completed the "Yueqing Zhengtai 150
"Construction drawings of megawatt agricultural-photovoltaic complementary power generation project".

2.2 Soil and Water Conservation Plan

According to the "Water and Soil Conservation Law of the People's Republic of China" and the "Administrative Measures for the Preparation, Submission and Approval of Water and Soil Conservation Plans for Development and Construction Projects",
According to the provisions of the Regulations on the Administration of Water Resources and Soil Conservation, all construction projects and technological transformation projects that may cause soil erosion must be reported.
Soil and water conservation program.

(1) In January 2021, the construction unit Yueqing Chint Photovoltaic Power Generation Co., Ltd. commissioned Zhejiang Jiantou Environmental Protection Engineering Co., Ltd.
The company (hereinafter referred to as "our company") is responsible for the preparation of soil and water conservation plan for this project.

(2) After accepting the commission, our company completed the Yueqing Chint 150 MW Agricultural Photovoltaic Complementary Power Generation Project in June 2021.
Project Soil and Water Conservation Plan Report" (Draft for Review).

(3) On June 8, 2021, the Wenzhou Water Conservancy Bureau organized the “Yueqing Chint 150 MW Agricultural Photovoltaic Complementary Power Generation Project”
Soil and Water Conservation Plan Report (Draft for Review)" was reviewed by letter and a review opinion was formed. Our company
The plan was modified and improved according to the review opinions and submitted to the "Leqing Zhengtai 150MW Agricultural Photovoltaic Complementary Photovoltaic Power Generation Project Water and Soil
Maintenance Plan Report" (Draft for Approval).

(4) On July 20, 2021, the Wenzhou Municipal Water Resources Bureau issued Document No. Wenshuixu [2021] 27 to amend the Yueqing Chint 150 MW
The "Soil and Water Conservation Plan Report for the Agricultural-Photovoltaic Complementary Power Generation Project" (Draft for Approval) was approved.

2.3 Changes to Soil and Water Conservation Plan

This project started in October 2015 and was completed in November 2016. According to relevant regulations, this project is a supplementary

Soil and water conservation plan, so the plan report is compiled according to the actual situation of the project.

According to the Soil and Water Conservation Management Measures (Zhejiang Water Conservation [2019] No. 3), there are no major changes in soil and water conservation during the construction process. 2.4 Subsequent design of soil and water conservation

The main design report of this project has a special chapter on soil and water conservation. Soil and water conservation measures are designed at the same time as the main project.

The project was designed, constructed and put into operation at the same time. A water and soil conservation plan was prepared in the later stage of the project construction.

3 Implementation of Soil and Water Conservation Plan

3.1 Scope of responsibility for soil and water loss prevention and control

3.1.1 Scope of responsibility for actual soil and water loss prevention and control projects

Wai

The actual area of responsibility for water and soil erosion prevention and control projects is 259.6476hm², of which permanent land

product

1.0009hm², temporary land area 258.6467hm².

The scope of project acceptance is the project construction area, area

259.6476hm²ÿ

The actual area of responsibility for soil and water loss prevention and control projects is shown in Table 3-1.

Table 3-1 Nature The composition of the project responsibility table for actual soil and water loss prevention Unit: hm² area

of land occupied by the scope of responsibility for soil and water loss prevention and control		and control projects	
Project construction area	Permanent land occupation	Booster station	1.0009
	Temporary land occupation	Photovoltaic support foundation	1.2
		inverter and box transformer foundation	0.81
		Photovoltaic area vacant land (recultivation)	249.0067
		Collector line	5.40
		Subtotal of road	1.43
		construction	0.80
		sites	258.6467
total			259.6476

3.1.2 Comparison between the approved and actual scope of responsibility for soil and water loss prevention and control

Compare

After comparison, the actual scope of responsibility for soil and water loss prevention and control in the project is the same as that approved in the plan.

The comparison of the areas of responsibility for soil and water loss prevention and control projects is shown in Table 3-2.

Table 3-2 Soil Comparison table of the area of responsibility for soil and water loss prevention and control projects Unit: hm²

and water loss prevention Scope of responsibility	Land occupation	The actual increase or decrease in the approved scope of the project composition (+/-) Reason				
Project construction area	Permanent land occupation	Photovoltaic	1.0009	1.0009	0	
	Temporary occupation of power collection lines	support foundation for booster station	1.2	1.2	0	
		Inverter and box transformer foundation		0.81	0	
		0.81 Photovoltaic area vacant land (recultivated land) 249.0067 249.0067			0	
			5.40	5.40	0	
		Road works	1.43	1.43	0	
		Construction site	0.80	0.80	0	
		Subtotal	258.6467	258.6467	0	
total			259.6476	259.6476	0	

3.1.3 Acceptance scope

The acceptance area is 259.6476hm², of which 1.0009hm² is permanent and 1.0009hm² is temporary.

258.6467hm². 3.1.4 Scope

of responsibility for prevention and control during

operation

During the operation period, the total scope of responsibility for soil and water loss prevention and control of the project is 259.6476hm2, which is the actual construction area of the project.

After the project is accepted, the operating unit will implement the management and maintenance system for each protective project within the scope of prevention and control responsibility.

Clarify responsibilities and ensure the maintenance of engineering measures and the nurturing and management of plant measures.

3.2 Setting up of waste dump

1) Approval of the plan for the establishment of a waste dump

The approved plan does not involve a waste dump and after earth and rock balance, there is no excess volume in the project.

2) Actual construction waste dump

During the actual construction, there was no abandoned material.

3.3 Borrowing area setting

1) Approval of the plan for the borrowing area

The approved plan does not involve an earth-borrowing site, and the borrower can purchase the material from a legal material yard.

2) Actual construction site

In actual construction, there is no earth-borrowing site involved, and the material can be purchased from a legal material yard.

3.4 Overall layout of soil and water conservation measures

The project was completed in November 2016. In January 2021, the construction unit commissioned Zhejiang Jiantou Environmental Protection Engineering Co., Ltd.

In July 2021, Wenzhou Water Conservancy Bureau issued a report on the soil and water conservation plan for this project under the title of "Wenshui Xu [2021] 27

Therefore, the soil and water conservation measures of the soil and water conservation plan approved by the project are the soil and water conservation measures actually implemented in the project.

Conservation measures.

In accordance with the approved soil and water conservation plan and measures design, the soil and water conservation measures actually implemented in the project are as follows:

Table 3-3 The project actually implemented soil and water conservation measures. The main

Prevention and control zones	area	part of the soil and water loss prevention and control measures	
		Measures type	system has been implemented.
Zone I - photovoltaic panel field cultivation; prevention and control zone	Prevention and control responsibility area 251.0167hm², including engineering measures, photovoltaic support foundation, inverter and box transformer and photovoltaic plant measures/vacant land area. Temporary measures Plastic colored strip cloth cover;		
Zone II - Booster station soil prevention area	The prevention and control responsibility area is 1.0009hm², including the rainwater pipe network of the upgrading engineering measures, greening and pressure station buildings, roads and supporting facilities, plant measures, comprehensive greening and greening area.	Temporary measures: plastic strips covering, temporary drainage, sand settling Engineering measures/vegetation	
Zone III - The collection line and prevention responsibility area is 6.83hm², including the area occupied by the collection road engineering prevention and control area lines and road engineering.		measures: sowing and planting grass	
		Temporary measures: plastic strips covering Engineering measures: recultivation; Plant measures/temporary	
Zone IV: Temporary construction prevention and control responsibility area 0.80hm², including construction Control area	The area of the site.	measures: temporary drainage, sand settling	

3.5 Completion status of soil and water conservation facilities

During the actual construction process, the project area adopted engineering measures such as recultivating land, rainwater pipe network, and greening and covering soil, and integrated greening, Plant measures such as sowing grass, as well as temporary measures such as temporary drainage, sand settling, and plastic strip covering on the site.

3.5.1 Zone I - Photovoltaic Module Field Prevention Area

Engineering measures: Recultivate 249.8067hm2 of land. Temporary measures: Cover 2000m2 with plastic striped cloth.

3.5.2 Zone II - Booster Station Prevention Area

Engineering measures: 865m of rainwater pipe network, 10,000m of greening soil ^{3}

Plant measures: comprehensive greening 0.2002hm2 ;

Temporary measures: Covering with plastic colored strips 1000m2, excavating 112m3 of drainage ditch, and excavating 5m3 of sedimentation pond.

3.5.3 Zone III - Collector Line and Road Engineering Prevention Area

Plant measures: sowing and planting grass 5.40hm2 ;

Temporary measures: Covering with plastic colored strips 1500m2.

3.5.4 Zone IV - Temporary construction facility prevention and control area

Engineering measures: recultivate 0.80hm2 of land ;

Temporary measures: excavation of 152m3 of earth in the drainage ditch and 15m3 of earth in the sedimentation pond.

3.5.5 Comparative analysis of the actual completion and planned design of soil and water conservation measures

surface

The comparison of the actual completion and planned design quantities of soil and water conservation measures is shown in Table 3-4.

Table 3-4 Comparison table of the actual completion and approved plan of the soil and water conservation measures

Prevention and control zoning measures Type Measure Name			unit	Plan approval	Practical Completion	Increase or decrease (+/-)
Zone I - Photovoltaic Module Field Engineering Measures		Recultivation	hm2	249.8067	249.8067	0
Prevention and Control Area Temporary Measures Plastic Color Strip Cloth Covering			m^2	2000	2000	0
Zone II - Plant control measures for booster stations district	Engineering measures	Greening and covering	m	865	865	0
		of rainwater pipe network	10,000 m^3	0.10	0.10	0
		Comprehensive greening	hm2	0.2002	0.2002	0
	Temporary measures	Plastic striped cloth cover	m^2	1000	1000	0
		Drainage ditch	m^3	112	112	0
		sedimentation	m^3	5	5	0
tank area III - collector line and plant measures		Spreading grass planting hm2 road		5.40	5.40	0
engineering prevention area temporary measures plastic color strip cloth cover			m^2	1500	1500	0
Zone IV - Temporary construction facility prevention and control area	Engineering measures	Recultivation	hm ^{2}	0.80	0.80	0
	Interim measures	drainage ditch	m^3	152	152	0
		Sedimentation pond	m^3	15	15	0

3.6 Completion of Soil and Water Conservation Investment

3.6.1 Actual completion of soil and water conservation investment

Funding

The total investment in soil and water conservation in the project was RMB 15.4761 million, of which RMB 13.0124 million was for engineering measures and RMB 13.0124 million was for plant measures.

Shi

209,300 yuan, temporary measures 27,100 yuan, soil and water conservation monitoring fees 48,100 yuan, independent expenses 102,000 yuan,

Water and Soil

The actual completed water and soil conservation investment for the project under the maintenance compensation fee project is shown in the table at RMB 20.771808 million. 3-5ÿ

Table 3-5 Serial Project Soil and Water Conservation Investment Table Actually Completed Project Unit: Ten thousand yuan

number	Measure Name	Complete investment
one	Engineering measures	1301.24
two	Plant measures	20.93
three	Temporary measures	2.71
Four	Soil and water conservation monitoring fees	4.81
five	Independent expenses	10.20
1	Construction management	4.20
2	fee Soil and water conservation plan preparation and survey and design fee	6.00
seven	Soil and water conservation compensation	207.71808
eight	Total Investment	1547.61

(1) Investment in engineering measures

This project completed soil and water conservation engineering measures with an investment of 13.0124 million yuan.

The completion status of investment in engineering measures is shown in Table 3-6.

Table 3-6 Serial Engineering measures investment table

number	Protection Engineering	Unit price per unit of engineering quantity (yuan)			Investment (ten thousand yuan)
one	Zone ÿ-PV panel field prevention and control area				1249.03
1	Recultivation	hm² 249.8067	50000		1249.03
two	Zone II - Booster station prevention and control area				48.21
1	Rainwater pipe	m	865	550	47.58
2	network greening	10,000 m³	0.10	63200	0.63
three	and covering area IV-temporary construction facility prevention area				4.00
1	Recultivation	hm²	0.80	50000	4.00
Part I Engineering Measures					1301.24

(2) Investment in plant measures

This project completed soil and water conservation plant measures with an investment of 209,300 yuan.

The completion status of investment in plant measures is shown in Table 3-7.

Table 3-7 Plant Measures Investment Table

Serial number	Protection Engineering	Unit quantity		Unit price (Yuan)	Investment (ten thousand yuan)
one	Zone II - Booster station prevention and control area				16.02
1	Comprehensive greening	hm²	0.2002	800000	16.02
two	Zone III - Collector lines and road engineering prevention and control area				4.91
1	Planting and	hm²	5.40	9100	4.91
sowing Part 2 Vegetative measures					20.93

(3) Investment in temporary measures

The project has completed the temporary measures of soil and water conservation with an investment of 27,100 yuan. The completion of the temporary measures investment is shown in Table 3-

8ÿ

Interim Measures Investment Table

Table 3-8

Serial number	Protection		Unit price of unit engineering quantity (yuan)			Investment (ten thousand yuan)
one	Engineering Zone I - Photovoltaic Module Field Prevention Area					1.05
1	Plastic striped cloth cover		m²	2000	5.26	1.05
two	Zone II - Booster station prevention and control area					0.67
1	Plastic strips cover 2		m²	1000	5.26	0.53
Temporary drainage ditch		Earthwork	m³	112	11.81	0.13
3	Sedimentation pond	Earthwork	m³	5	11.81	0.01
three	Zone III - Collector lines and road engineering prevention and control area					0.79
1	Plastic colored strips cover Zone IV		m²	1500	5.26	0.79
Four	- temporary construction facility prevention and control area					0.20
1	gutter	Earthwork	m³	152	11.81	0.18
2	Sedimentation pond	Earthwork	m³	15	11.81	0.02
five	Other temporary measures			0	2%	0
Part III. Interim Measures						2.71

(4) Soil and water conservation compensation

The project's soil and water conservation compensation fee is 20.771808 million yuan, which has been paid in full by the construction unit.

3.6.2 Analysis of reasons for changes in soil and water conservation project investment

The project was completed in November 2016. In January 2021, the construction unit commissioned Zhejiang Jiantou Environmental Protection Engineering Co., Ltd.

In July 2021, Wenzhou Water Conservancy Bureau issued a report on the soil and water conservation plan for this project under the title of "Wenshui Xu [2021] 27

Therefore, the soil and water conservation investment of the soil and water conservation plan approved by the project is the actual soil and water conservation investment of the project.

Maintain investment.

The comparison of total investment in soil and water conservation projects is shown in Table 3-9.

Table 3-9 Comparison table of total investment in soil and water conservation projects Unit: Ten thousand yuan

Serial number	Measure name Scheme design Engineering measures Plant measures Temporary	Complete investment	Increase or decrease (+/-)
one	measures Soil and	1301.24	1301.24	0
two	water conservation	20.93	20.93	0
three	monitoring fee	2.71	2.71	0
Four	Independent fees Construction	4.81	4.81	0
Five	management fee Soil	10.20	10.20	0
1	and water conservation	4.20	4.20	0
2	plan preparation and survey and design fees Soil and water conservation	6.00	6.00	0
seven	compensation fee Total investment	207.7180 8	207.7180 8	0
eight				0
		1547.61	1547.61	

4. Quality of soil and water conservation projects

4.1 Quality Management System

The project was constructed by Yueqing Chint Photovoltaic Power Generation Co., Ltd. and China Energy Engineering Group Zhejiang Electric Power Design Institute Co., Ltd.

The company is responsible for the main project design and construction drawing design, and Zhejiang Jiantou Environmental Protection Engineering Co., Ltd. is responsible for the project soil and water conservation

Zhejiang Chint New Energy Development Co., Ltd. is the general contractor and Hangzhou Transportation

Lian Electric Engineering Co., Ltd., Jiangsu Huaneng Construction Engineering Co., Ltd., Jiangsu Tianli Construction Group Co., Ltd., Zhongyi

Construction Co., Ltd., Zhejiang Engineering Geophysical Exploration Institute, Shaanxi Construction Engineering Sixth Construction Group Co., Ltd., Jianhu County Shichang

Loading and Unloading Services Co., Ltd., Yueqing Shuangyan Construction Engineering Co., Ltd., Linxiang Zhenyu Construction Engineering Co., Ltd.,

Xingda Water Conservancy Construction Co., Ltd., Yueqing Tiangong Construction Co., Ltd., Jiangsu Jianxing Construction Group Co., Ltd.,

Dejing Group Co., Ltd. and Zhejiang Zefeng Agriculture Co., Ltd. undertook the construction, and Zhejiang Huadong Engineering Consulting Co., Ltd.

Simultaneously supervise the project's soil and water conservation measures.

The main construction units involved in the project are shown in Table 4-1.

Table 4-1 Unit Table of major participating units in the project

categories	Unit Name	Work content and scope Engineering
Construction unit	Yueqing Chint Photovoltaic Power Generation Co.,	construction
Design unit Soil	Ltd. China Energy Construction Group Zhejiang Electric Power Design Institute Co., Ltd.	Engineering design
and water conservation plan preparation	Zhejiang Jiantou Environmental Protection	Soil and water conservation plan preparation
unit Soil and water conservation	Engineering Co., Ltd. Zhejiang Jiantou Environmental	Soil and water conservation
monitoring unit Main project	Protection Engineering Co., Ltd. Zhejiang Huadong	monitoring Engineering supervision, soil and water conservation supervision
supervision unit General contractor	Engineering Consulting Co., Ltd. Zhejiang Chint New	
Construction unit	Energy Development Co., Ltd. Hangzhou Jiaolian Electrical Engineering Co., Ltd. Jiangsu Huaneng Construction Engineering Co., Ltd. Jiangsu Tianli Construction Group Co., Ltd. Zhongyi Construction Co., Ltd. Zhejiang Provincial Engineering Geophysical Exploration Institute Shaanxi Construction Engineering Sixth Construction Group Co., Ltd. Jianhu County Shichang Loading and Unloading Service Co., Ltd. Yueqing Shuangyan Construction Engineering Co., Ltd. Linxiang Zhenyu Construction Engineering Co., Ltd. Yueqing Xingda Water Conservancy Construction Co., Ltd. Yueqing Tiangong Construction Co., Ltd. Jiangsu Jianxing Construction Group Co.,	Civil engineering, installation and landscaping
Operation Unit	Ltd. Dejing Group Co., Ltd. Zhejiang Zefeng Agriculture Co., Ltd. Yueqing Chint Photovoltaic Power Generation Co., Ltd.	Operation management

4.1.1 Construction unit's quality control system

The construction unit attaches great importance to the project quality management and strictly follows the principle of "government supervision, legal person management, social supervision, The four-level quality management assurance system of "enterprise self-inspection" implements quality control and supervision throughout the entire process. During the process, the project legal person system, bidding system, construction supervision system and contract management system are strictly implemented. The construction units are required to implement the quality assurance system of "three self-inspections, three implementations, and three no-passing" and strictly follow the approval procedures. The main project supervision unit is responsible for the construction supervision of the soil and water conservation project, and always adheres to the principle of "project quality". With "quality" as the core, we have established a quality management system and implemented all-round and full-process supervision. In order to strengthen quality management, During the construction process, the Infrastructure Engineering Department conducted comprehensive supervision and management of the on-site construction quality and understood the construction quality. If any problems are found, the supervisor and construction unit shall be asked to handle them immediately. Joint acceptance of completed projects shall be organized in a timely manner.

After the project started, the construction unit implemented high standards and strict requirements throughout every link and actual work of the project construction. In addition to routine project quality inspections, we have organized relevant leaders and engineering and technical personnel to participate in project quality inspections many times. Actively cooperate with higher-level leadership departments to conduct quality supervision and spot checks on soil and water conservation projects at construction sites, Eliminate the disease in the bud.

The construction unit has assigned a dedicated person to be responsible for production safety and civilized construction management, and promptly supervise the existing safety hazards. Under the strict management system, no safety accidents occurred during the construction of soil and water conservation projects. The construction unit, construction unit and supervision unit are responsible for the whole process of project quality. The measures taken were effective and no major quality accidents or defects occurred during the construction of the soil and water conservation project. General project quality problems and technical defects shall be resolved on site by the construction unit and supervision personnel.

4.1.2 Quality control system of the design unit

In order to fully express the design intent and ensure the project quality and construction period requirements, the design unit appoints a design representative to do a good job in various aspects. Stage technical disclosure. Firmly establish the idea of "quality first" and stick to your job. Adhere to technical standards and strictly implement regulations. standards and regulations, actively solve various technical quality problems, coordinate with the construction unit, supervision unit, and construction unit Familiar with the design principles, design plans, design intentions and construction organization design plans of the project, and deeply involved in the construction process Enter the site to conduct process supervision and control, timely understand the construction status and grasp the construction situation.

At different construction stages, the design unit promptly organizes relevant technical personnel to conduct On-site technical disclosure. During the entire process of engineering construction, the design personnel maintain close contact with the construction unit, supervision unit, and construction unit. Close contact to ensure the smooth progress of the project. Review and correct errors and omissions in the original design documents, and

Provide improvements through technical contact forms; assist the resident office in handling design changes; and put forward design treatment opinions on important technical issues.

4.1.3 Quality control system of the supervision unit

The soil and water conservation engineering measures are designed and constructed at the same time as the main project, and the supervision is undertaken by the supervision unit of the main project.

The implementation of the supervision unit, supervision system and supervision procedures is basically consistent with the main project.

The Supervision Office strictly follows the "Water and Soil Conservation Law of the People's Republic of China" and the

The relevant work is required to be carried out in accordance with the "Soil and Water Conservation Plan Report".

Effective measures should be taken in advance to prevent soil and water loss. The Supervision Office shall promptly prepare soil and water conservation supervision plans and implementation details.

Regularly track and inspect the implementation of the soil and water conservation plan, and supervise the construction unit to implement each soil and water conservation measure;

During routine inspections, if the supervisor finds any phenomenon or signs that are not conducive to soil and water conservation, he will immediately urge the construction unit to solve the problem.

Eliminate hidden dangers; regularly report relevant information on soil and water conservation to the contractor.

sources, dispose of earthwork as required, control dust, protect vegetation, prevent soil and water loss accidents, and make the workers

The soil and water conservation of the project met the expected requirements.

Main soil and water conservation measures taken during the supervision process:

1) Construction waste and waste materials generated during construction shall be handled separately according to their respective situations and strictly

It is forbidden to pollute water sources for living and production, prevent soil erosion and ensure civilized construction.

2) Take various effective protective measures to prevent soil erosion on the land they use or occupy, and

Prevent soil and water loss caused by excavation and filling of earth and stone due to engineering construction.

3) Land-saving measures: During the construction process, minimize land acquisition and use land within the permanent occupied area.

4.1.4 Construction unit quality assurance system

We will conscientiously implement relevant standards and improve the quality assurance system. We will implement quality management throughout the entire process and conduct quality management for all employees.

Quality awareness education, earnestly implement the mandatory provisions of engineering construction standards, and improve the awareness of all practitioners on mandatory

Strengthen the implementation and inspection efforts in the quality management system and on-site quality inspection to ensure the standard

Smoothly implemented.

The project management department has established a quality self-inspection system of "horizontally to the edge, vertically to the bottom, and effective control", and strictly implements the "three

The unit has a special quality management and inspection system. The project department has a quality inspection department, and the project management department has a

Full-time quality inspection engineers and part-time quality inspectors form an organic whole with clear tasks, responsibilities and authority.

The project department has set up a construction site laboratory, and the test work is carried out by experienced testers.

The test personnel are responsible for the project and are given a veto power to ensure the quality of the project.

Implement a comprehensive quality management system and set up a "three-in-one" QC team. Adhere to the principle of "prevention first, prevention and inspection combined"

Strengthen the testing and inspection of raw materials, and strengthen the sampling inspection of raw materials.

Prevent unqualified materials from entering the construction site.

Carefully implement the quality management system, technical disclosure system, and layout review system, and implement the "three controls" for quality;

Handover inspection and approval system; hidden engineering inspection and approval system; sub-project quality inspection and evaluation system; quality accident report processing

Effective systems such as quality inspection, evaluation, rewards and penalties must be strictly enforced and implemented conscientiously to ensure that quality control is truly integrated into the

During construction.

During construction, we strengthened self-inspection of quality and dealt with problems in a timely manner.

The designers and supervisors conducted on-site surveys, proposed solutions in a timely manner, and successfully resolved the problems.

After taking the above effective measures, there have been no soil and water loss safety accidents or accidents caused by soil and water loss since the start of construction.

Complaint phenomenon.

4.2 Assessment of the quality of soil and water conservation projects in each control zone

4.2.1 Project division and results

According to the soil and water conservation plan design of soil and water conservation measures, combined with the actual construction of soil and water conservation measures in the project,

Refer to the "Soil and Water Conservation Project Quality Assessment Regulations" (SL336-2006) and upgrade the implemented photovoltaic module field prevention area to

Project divisions were made into pressure station prevention and control areas, collector line and road engineering prevention and control areas, and temporary construction facility prevention and control areas.

The classification of soil and water conservation engineering projects is shown in Table 4-2.

Table 4-2 Unit Soil and water conservation project classification table Division

Project Agricultural	project Recultivation	Unit Engineering
Cultivation and Technical Measures Flood	Drainage	Every 20~50hm² is divided into a unit project Every 100m
Control and Drainage Project	point	is a unit project Every 1hm2 is a unit project Every
Vegetation Construction Project	Patchy vegetation	100m is a unit project Every 10~30m3 is a unit
Temporary protection works	Drainage	project Every 100~1000m² is divided into a
		unit project
	Sedimentation Cover	

4.2.2 Engineering quality assessment in each prevention and control area

According to the quarterly supervision report and supervision summary report during the construction period, the project measurement list and quality supervision report that have been completed and signed are compared.

At the same time, combined with on-site investigation and review of construction records, supervision records and related quality assessment technical documents, in accordance with the

According to the Technical Specification for Acceptance of Soil and Water Conservation Facilities for Construction Projects (GB/T22490-2008),

Quality Assessment Procedures" (SL336-2006), to assess the quality grade of implemented soil and water conservation projects.

The project does not have a special soil and water conservation supervision. During the construction process, the quality control target of soil and water conservation measures is to

The project is completed by the overall quality control system, and the supervision and quality inspection of the project are managed by the main project supervisor.

The quality assessment results of implemented soil and water conservation facilities are shown in Table 4-2.

Table 4-2 Unit Table of results of quality assessment of implemented soil and water conservation facilities

Project Division Project		Appearance quality	Quality Assessment
Agricultural cultivation and technical measures Recultivation		Good recultivation effect	Passed
Flood control and drainage engineering	Drainage appearance is beautiful, the size is qualified, vegetation construction project point patch		Passed
vegetation		Vegetation growth and good	Passed
Temporary protection works	drainage	Temporary drainage ditch has beautiful appearance and qualified size	Passed
	The sedimentation pond has a beautiful appearance and a qualified size.		Passed
	Covering measures are in place and the protection effect is good		Passed

4.3 Stability assessment of waste dump

During the actual construction, no abandoned materials were generated.

4.4 Overall quality evaluation

Based on the above assessment results, the soil and water conservation measures implemented in the project are currently operating well and can effectively prevent

Control soil erosion, meet soil and water conservation requirements, and ensure that the overall quality of soil and water conservation projects is qualified.

5. Initial operation of the project and soil and water conservation effects

5.1 Initial operation

After the completion of various soil and water conservation projects, the operation is good, the soil and water conservation facilities are safe and stable, and the rainstorm is complete.

Good, no damage was found, it played a good role in soil and water conservation, and basically achieved the expected effect of soil and water loss prevention and control.

Since the implementation of various soil and water conservation measures, soil and water loss in the project area has been effectively controlled, and the occurrence of soil and water loss hazards has been prevented.

The ecological environment in the project area has been restored and improved.

After on-site investigation, it was found that after the vegetation in the project area was restored, the plant growth was in good condition and the landscape and ecological benefits were significant;

Various soil and water conservation measures are in place to ensure the safe operation of the project, play a good role in soil and water conservation, and protect

Protected soil and water resources.

As the years go by, various soil and water conservation facilities will continue to play a greater role.

The measured soil and water loss hazards have been effectively controlled, and the overall layout of soil and water loss prevention and control is practical and reasonable.

The implementation of the plan is generally good, and all indicators have reached the prevention and control goals set out in the approved plan.

5.2 Soil and water conservation effect

1) Overall control degree of soil and water loss

Within the scope of the project construction, according to the on-site verification results, the area of soil erosion is 256.6476hm², and the soil erosion control has reached

The target area is 256.6476hm², and the overall soil and water loss control rate is 99.9%, reaching the 95% prevention and control target determined in the approved plan.

2) Soil loss control ratio Through the investigation

of the status quo of soil and water conservation in the project construction area and the implementation of various soil and water conservation measures, soil and water loss prevention and control

The effect is remarkable. When reaching the design level, the soil erosion modulus in the project area drops to 300t/km2·a, and the soil loss control ratio is 1.7.

Achieve the prevention and control objectives determined in the approved

plan. 3) Slag protection rate

There is no waste in the project. During the construction period, temporary earth piles are set up for protection, and temporary covering measures are taken to ensure that the

The temporary piles of earth and stone during the construction period were effectively protected, effectively controlling soil and water loss to the designed level.

The annual slag interception rate is about 99.9%, achieving the prevention and control target of 95%.

4) Forest and grass vegetation recovery rate

Vegetation can be restored in the area where vegetation can be restored after taking measures to conserve soil and water.

The vegetation area is 5.6002hm², the actual forest and grass vegetation restoration area is 5.6002hm², and the forest and grass vegetation restoration rate is 99.99%, reaching

95% of the prevention and control target determined in the

plan. 5) Forest and grass coverage rate

As the project is an agricultural photovoltaic complementary project, the photovoltaic area will be reclaimed in the later stage, and the reclaimed area accounts for 96.5% of the total area, which can be greened.

The area is small, so the photovoltaic power generation area is not included in the calculation of forest and grass coverage rate, only the booster station prevention and control area and the collector line and road

The forest and grass coverage rate is calculated in the road engineering prevention and control area. The construction area of the project is 7.8309hm² (excluding the recultivated area).

In the design level year, the forest and grass vegetation area is 5.6002hm². All areas where plant measures can be taken will implement plant measures.

The forest and grass coverage rate in the construction area is 71.51%, reaching the prevention and control target of 22%.

6) Topsoil protection rate

There is no topsoil data in the project area, so the topsoil protection rate is not involved.

5.3 Public Satisfaction Survey

During the acceptance stage of soil and water conservation facilities, the acceptance report preparation unit will ask residents around the project about the construction status and relevant

The survey shows that the construction unit, construction unit and supervision unit attach great importance to soil and water conservation.

During the construction period, soil and water conservation and ecological environment protection work should be included in the work plan.

Temporary drainage measures were set up on the site. After the construction was completed, the construction site was cleaned up to effectively prevent the waste generated during the construction process.

Water, dust, and debris pollution harm the surrounding ecological environment. Surrounding residents are very concerned about the various water and soil conservation measures taken during the construction period.

Satisfied with the measures.

6 Soil and Water Conservation Management

6.1 Organization and Leadership

6.1.1 Leading bodies for soil and water conservation work

The construction unit is fully responsible for the organization and management of the project construction.

The project legal person responsibility system, recruitment and

The construction and management system of the main project includes soil and water conservation measures and is responsible for the project

Construction management, organization of project implementation, and fund payment.

6.1.2 Soil and Water Conservation Management Organization

According to the approved plan, the construction unit shall appoint a dedicated person to be responsible for the soil and water conservation work of the project construction.

Supervision and implementation of soil and water conservation measures during the construction period, construction and management of soil and water conservation projects, to ensure that all stages of project construction are fully

The Yueqing Water Conservancy Bureau is the supervision and management agency for soil and water conservation, and the project department is

The specific implementation agencies of various soil and water conservation measures. The perfect soil and water conservation agency system ensures the main project and soil and water conservation

The smooth implementation of various soil and water conservation measures in the plan and effective supervision and management have enabled various problems reported during the construction process to be resolved.

Problems and emergencies can be coordinated and resolved in a timely manner.

The construction and supervision units of soil and water conservation measures are the main project construction units and supervision units.

6.2 Rules and Regulations

6.2.1 Rules and regulations for soil and water conservation project construction

The construction units and construction units conscientiously implement and implement the principle of "prevention first, protection first, comprehensive planning, comprehensive management,

The soil and water conservation work policy is to "adapt measures to local conditions, highlight key points, scientific management, and focus on benefits".

Through publicity and education, the awareness of soil and water conservation among construction contractors and managers at all levels will be raised.

The system of responsibility has made soil and water conservation one of the contents of project progress and quality assessment.

The determined water and soil conservation measures are required to be implemented and the project quality is strictly controlled. During the construction process, various archives are established and improved.

Accumulate, analyze and compile data, summarize experience, and continuously improve soil and water conservation management.

After the completion of the neutralization project, it will be subject to supervision and inspection by the water administration department and the completion of soil and water conservation facilities will be carried out according to relevant requirements.

Work acceptance.

6.2.2 Construction organization system

1) Project manager responsibility system

Each construction unit has established a project department, and the project manager is fully responsible for the construction arrangement, construction technology plan and Measures formulation, contract management, construction quality management, construction measurement and setting out, safety and civilized construction management, materials and Equipment management, etc., through the implementation of the project team's management system, to ensure the smooth implementation of soil and water conservation projects.

2) Education and training system

Strengthen the publicity and education of soil and water conservation during the work process, and improve the awareness of construction contractors and managers at all levels. At the same time, do a good job in quality education for all personnel, improve quality awareness, and make all personnel firmly To ensure the safety of the construction, all the staff on site received safety training and education. Comply with all rules and regulations regarding safe production.

3) Technical support system

Each construction organization shall be equipped with sufficient technical force and construction machinery and equipment, and shall formulate a feasible construction schedule. Actively promote and apply new technologies, new materials and new processes to improve labor productivity, ensure construction schedules, and reduce soil and water pollution. Loss.

6.2.3 Quality Control System

1) Quality control system

According to the relevant laws and regulations of the state, the quality of construction projects is implemented by the construction unit being responsible, the construction unit guaranteeing, The quality management system is controlled by the supervision unit and supervised by the quality supervision station. The construction unit establishes a quality assurance system and implements the "three The supervision unit shall formulate supervision implementation rules and implement various supervision works. The construction unit shall use relevant laws, regulations, design documents and contract documents as quality control documents. The basis for the system is to strictly control the overall and major issues that affect the quality of the project.

2) Quality self-inspection system

The quality self-inspection system is basically composed of personnel technical quality assurance, implementation of technical standards assurance, instrument and equipment performance assurance, etc. After each process is completed, the team will first conduct self-inspection, and the team's part-time quality inspector will fill in the initial inspection record. Re-inspect and appraise, and keep records of handover of continuous construction process; the quality inspector of the project department is responsible for re-inspecting each process, The re-inspection is used as the basis for assessing and evaluating the work quality of the construction team; the on-site quality inspector of the construction unit conducts the final inspection; For unit projects that are constructed in different processes, the next process can only be carried out after the final inspection of the previous process is passed;

After each unit project is completed, the full-time quality inspector will conduct inspection and acceptance together with relevant personnel, and evaluate the quality, etc.

class.

3) Quality reward and punishment system

In order to give full play to the enthusiasm and sense of responsibility of construction personnel, we set up an excellent project quality award and carried out quality competition.

Certain rewards will be given to rewarded teams, and certain punishments will be given to teams that fail to meet quality standards.

Through the above effective measures, the project did not experience any quality accidents caused by technical problems.

6.2.4 Safety production system

1) Safety supervision mechanism

On-site safety organization establishment: The project manager is the first person responsible for production safety, and the project department has a safety manager.

Each construction team leader serves as a safety officer and establishes a safety organization to carry out safety management activities in an orderly manner.

Implementation of safety responsibility: Implement the safety responsibility system, establish a safety responsibility system for personnel at all levels, and clarify the responsibilities of personnel at all levels.

Safety responsibility, safety responsibility letters are signed at all levels, and rewards and punishments are clearly defined.

2) Safety target management

Implement safety target management and decompose the overall safety production target into sub-targets such as people, machines, materials, sites, and environment.

standards, and adhere to dynamic safety management measures for all employees, throughout the entire process, in all aspects, and around the clock.

3) Safety of construction workers

The project selects professional construction personnel, and requires special workers to hold certificates before taking up their posts.

According to the changes in the project site conditions and construction production, timely on-site education and training for construction personnel are carried out to increase

Strengthen the safety awareness of construction workers and improve their safety knowledge.

Corresponding labor protection supplies.

4) Construction equipment safety

(1) Strictly implement safety operating procedures. Safety officers are responsible for safety education and inspection and have the right to stop unreasonable demands.

construction operations; when mechanical equipment is in operation, especially during construction, personnel on duty must stay at their posts and work at night.

The industry should be adequately lit.

(2) Establish a regular inspection and maintenance system for mechanical equipment. All on-site transportation and lifting equipment must be inspected and maintained regularly.

Conduct regular safety inspections.

(3) All kinds of machinery and electrical equipment are operated by full-time personnel, and the equipment and tools are operated by designated personnel.

The capacity must be within the permitted range, overloading is strictly prohibited, and maintenance must be carried out in accordance with regulations.

Ground protection and electric shock protection devices should be installed, and rain, moisture and lightning protection projects should be carried out.

6.2.5 Soil and Water Conservation and Ecological Environment Protection System

Carry out soil and water conservation publicity and education for all construction personnel, and establish soil and water conservation and ecological

Environmental protection responsibility system, including soil and water conservation and ecological environment protection work in the work plan, and taking effective measures

Prevent wastewater, dust, debris and other pollution generated during the construction process from harming the surrounding ecological environment.

Set up sufficient temporary sanitary facilities at the construction site and living area, conduct regular sanitation cleaning, and implement preventive measures in a timely manner.

Conservation projects and restoration of vegetation on exposed surfaces can prevent soil erosion.

After the project is completed, the construction site shall be cleaned up promptly and thoroughly, and restoration shall be carried out to meet the requirements of the approved plan.

When transporting earth, stone, building materials and other materials that are easy to fly, cover them tightly with tarpaulins and load them appropriately without exceeding the limit.

Transportation. At the same time, we are equipped with professional sprinkler trucks to sprinkle water on the construction site and transportation roads when the weather is dry to keep the ground moist.

Moisturize to reduce dust.

6.3 Construction Management

6.3.1 Project bidding

As part of the main project, water and soil conservation measures are tendered together with the main project as a whole.

The provisions concerning soil and water conservation are scattered in the bidding documents.

The project was carried out in strict accordance with the Bidding Law of the People's Republic of China. The construction unit organized the corresponding

The technical staff worked with the design unit to prepare the bidding documents. The bidding work was conducted on the principles of openness, fairness and justice.

Finally, we selected Zhejiang Chenyuan Construction, a construction company with corresponding qualifications, strength, good performance, reputation and reasonable price.

Limited Company shall be the final successful bidder.

The construction unit shall include in the bidding documents the parts related to soil and water conservation such as rainy season construction, waterproofing and drainage, and greening projects.

The regulations require bidders to make them clear in their bidding documents.

6.3.2 Engineering contracts and their implementation

The construction contract for the soil and water conservation part of the project is signed together with the main project.

The project started in October 2015 and was completed at the end of November 2016. During the implementation of the main project, the construction unit

Based on the bidding documents and construction contracts, we will carry out construction in accordance with the technical specifications and contract requirements and conscientiously perform the contract.

A lot of work has been done in preventing and controlling soil erosion in projects.

6.4 Soil and Water Conservation Monitoring

The project commissioned our company to carry out soil and water conservation monitoring in July 2012.

Summary Report on Soil and Water Conservation Monitoring of Agricultural Photovoltaic Complementary Power Generation Project, self-monitoring by the construction unit during the construction period,

The measures taken, such as recultivating land, drainage measures, greening and covering soil, greening projects and temporary protection projects, effectively prevented and controlled the damage caused by construction

After the implementation of soil and water conservation measures, the intensity of soil and water loss in each prevention and control area has been greatly reduced.

The weighted average soil erosion modulus in the project area dropped to 290t/km2·a.

During the actual construction process of the project, the construction unit, construction unit and supervision unit attached great importance to soil and water conservation.

Regular field investigations are conducted on the growth and development of vegetation, the integrity of barrier facilities, and the soil and water loss in the construction area.

Due to the effective prevention and control of soil erosion during the construction process, no major soil erosion occurred during the construction period.

The loss incident did not cause obvious adverse impact on the ecological environment of the project site.

6.5 Soil and Water Conservation Supervision

This project did not entrust a special soil and water conservation supervision unit to carry out soil and water conservation supervision. The soil and water conservation supervision work was carried out by the main

The project supervision unit shall bear the responsibility together. During the work, the supervision unit shall, in accordance with the requirements of environmental protection and soil and water conservation,

Carry out whole-process construction supervision for soil and water conservation projects within the scope.

1) Supervision organization

The supervision unit is organized in accordance with the various disciplines and has established a team consisting of the director, director representative and on-site supervisor.

The resident supervision engineer is responsible for the supervision tasks within the entire supervision scope and shall coordinate with the design,

The supervision department is responsible for the supervision tasks within its jurisdiction.

Within the scope of the construction unit's authorization, the construction unit is supervised throughout the entire process, in accordance with the "three controls, two managements, and one coordination" principle.

The overall goal is to carry out comprehensive supervision and management of the project while being responsible for soil and water conservation.

2) Engineering quality inspection methods

The supervision unit's assessment of project quality shall be based on the "Uniform Standard for Acceptance of Construction Quality of Building Projects" (GB50300-2013)

The listed indicators are checked item by item and measured, including standard experimental verification of incoming materials, self-inspection by the construction unit, and monitoring.

Methods include on-site control by management personnel, on-site tests by supervision units and laboratory spot checks.

3) Project progress control

The supervision unit controls the progress of the project according to the contract period. First, the implementation of the construction organization plan is required.

The construction units strengthened the management of personnel and machinery, made reasonable arrangements, maximized the role of machinery, and accelerated the progress of construction.

During the construction process, the supervision unit regularly checks the number of major machines and requires that projects that cannot be completed as planned

The construction unit will make timely adjustments and increase investment to make up for the shortfall in the next cycle.

Regular progress meetings are held to check the status of personnel, machinery and equipment, and regular site meetings and monthly construction reports are used to

Adjust the plan according to the construction period and arrange the remaining projects in countdown, including drainage, protection and greening projects.

Most of the projects were completed within the contract period.

4) Soil and water conservation investment control

The supervision unit shall control the investment based on the bidding documents, construction contracts, project lists, construction drawings and project calculations.

Methods, strict control, to avoid over-counting and wrong counting. The measurement ledger and measurement chart established by the supervision unit,

The progress and status of measurement are reflected at any time. For projects with quantity but no price and newly added projects, the construction unit shall submit an application.

The supervision unit shall refer to the unit price of adjacent bidding sections and the local construction project market information price, and report to the general manager after review and verification.

Supervisory office approval.

In terms of project change review, the supervision unit, from on-site supervisors to resident supervision engineers, checks every level.

In addition, the supervision unit is required to submit a review opinion transmission form, which shall include the change content, reason and unit price application, change basis, and workmanship.

The quantity calculation, calculation formulas and attachments shall be reviewed one by one and handled strictly in accordance with the supervision regulations. No reporting beyond the level is allowed.

6.6 Implementation of supervision and inspection opinions of water administration departments

The project construction unit took the initiative to contact the local water administration department and consciously accepted the local water administration department's

Departments' supervision and inspection, actively communicate and coordinate with water administration departments to ensure the implementation of various soil and water conservation measures

Smooth implementation.

6.7 Payment of Soil and Water Conservation Compensation Fees

The construction unit has paid the project soil and water conservation compensation fee of RMB 20.771808 million in full.

6.8 Soil and Water Conservation Facility Management and Maintenance Project

Soil and water conservation work includes not only the implementation of various soil and water conservation measures, but also the maintenance of soil and water conservation measures.

For the maintenance of facilities after construction, appropriate technical guarantee measures shall be taken.

The soil and water conservation facility management agency of this project is Yueqing Chint Photovoltaic Power Generation Co., Ltd., which needs to be equipped with special personnel.

The team should formulate corresponding soil and water conservation facility maintenance system to ensure the operation efficiency of soil and water conservation measures after completion.

The construction unit should pay attention to strengthening the cultivation of plant measures, do a good job in the cultivation and management of young forests, and ensure the growth of various plants.

Improve the survival rate of soil and water conservation measures as soon as possible. Regularly or irregularly inspect the soil and water conservation projects that have been accepted.

Carry out inspections to keep track of its operating status at any time to ensure the project is in good condition.

7 Conclusion

7.1 Conclusion

After the completion of various soil and water conservation facilities, they are running well, safe and stable, and no damage was found after the heavy rain, playing a role.

Good soil and water conservation effect, basically achieved the expected effect of soil and water loss prevention and control, various soil and water conservation measures have been implemented

So far, the project area has been effectively controlled for water and soil erosion, and the damage caused by water and soil erosion has been prevented.

Ecological environment.

After on-site investigation, it was found that after the vegetation in the project area was restored, the plant growth was in good condition and the landscape and ecological benefits were significant;

Various soil and water conservation measures are in place to ensure the safe operation of the project, play a good role in soil and water conservation, and protect

Protected soil and water resources.

After reviewing the relevant self-inspection results and delivery data, the quality of the project from raw materials, intermediate products to finished products is

Qualified, the structure dimensions are regular, the appearance is beautiful, the quality meets the design requirements, and the overall quality of the engineering measures is qualified.

Since the construction and operation of various soil and water conservation facilities, they have played a good role in soil and water conservation.

Proper soil and water conservation measures, reasonable selection of grass and tree species, and effective management measures will help protect and beautify the local ecology.

The environment played a positive role and plant measures were generally satisfactory.

According to the self-inspection and preliminary verification of various soil and water conservation measures that have been implemented, all soil and water loss areas during the project construction have been effectively

Effective land management and improvement, the total soil and water loss control rate is 99.9%, the soil loss control ratio is 1.7, the slag interception rate is 99.9%, and the forest and grass

The vegetation restoration rate is 99.99% and the forest and grass coverage rate is

71.51%. 7.2 Arrangements for remaining issues

After the completion and acceptance of the soil and water conservation facilities, the construction unit shall be responsible for the management, upkeep and maintenance of the project's soil and water conservation facilities.

The construction unit attached great importance to the design, supervision and management of soil and water conservation projects, and no major soil and water conservation accidents occurred during the construction period.

To prevent water and soil loss, various soil and water conservation measures have been built and are operating well.

In order to ensure the normal operation of the facilities, in addition to strengthening maintenance work, regular inspections and maintenance of soil and water conservation facilities are carried out.

From the on-site observation, vegetation recovery in a small area of the booster station is poor and needs to be replanted and strengthened in terms of maintenance and management.

Play the role of water storage and soil conservation.

Through the adoption of various soil and water conservation measures, the impact of the project on the ecological environment has been basically restored, and the adverse impacts

The soil and water loss caused by the project construction has been basically eliminated. The experts of the acceptance team are requested to approve the project.

Special acceptance of soil and water conservation facilities.

8 Annexes and drawings

8.1 Attachments

1. Relevant events during the construction process

2. Lease Contract for the Right to Use State-owned Agricultural Land

3. Notice of Registration of Engineering Enterprise Investment Project (Capital Construction)

4. Regarding the transfer of the land parcel 0577-YQ-YY-09-01-01 in the Henan unit of Xigan, Yueqing City (150 MW of agricultural photovoltaic complementary photovoltaic

5. Planning Permit for Construction Land

6. Review of the architectural design of the 150MW Chint agro-photovoltaic complementary power generation project in Shenglitang reclamation area in the central area of Yueqing City

summary

7. Minutes of the coordination meeting for the grid connection and start-up of Yueqing Chint's 150MW agricultural photovoltaic power generation project

8. Acceptance certificate for trial operation and handover of production of LeTai Photovoltaic Station of Yueqing Chint Photovoltaic Power Generation Co., Ltd.

9. Letter of approval for the completion and acceptance of the Yueqing Chint 150MW agricultural photovoltaic power generation project

10. Approval of the Soil and Water Conservation Plan for the Yueqing Chint 150MW Agri-Photovoltaic Power Generation Project

11. Proof of payment of compensation for soil and water conservation of the project

12. Acceptance site photos

Annex 1

Relevant events during the construction process

1. On September 18, 2015, the Yueqing Municipal Agriculture Bureau and Yueqing Chint Photovoltaic Power Generation Co., Ltd. signed a state-owned agricultural land

Right of use lease contract;

2. On October 29, 2015, the Development and Reform Bureau of Yueqing City issued a notice on

3. On June 27, 2016, the Housing and Urban-Rural Planning and
Construction Bureau of Yueqing City issued the “Leqing Housing and Urban-Rural Planning and Construction Development [2016] 459

"No. " was issued on the transfer of the 0577-YQ-YY-09-01-01 plot of land in the Henan unit of Xigan, Yueqing City (150 MW of agricultural photovoltaic complementary

4. On October 11, 2016, the Yueqing Municipal Housing and Urban-Rural Planning and Construction Bureau issued a construction land planning permit;

5. On October 19, 2016, the Lecheng Central District Management Committee of Yueqing City reviewed the design of the project construction plan.

And issue the minutes of the review.

6. On November 18, 2016, the Yueqing Chint 150 MW Agricultural Photovoltaic Complementary Power Plant Project was held at the State Grid Wenzhou Power Supply Company Building.

Photovoltaic power generation project grid connection intervention start-up
coordination meeting. 7. On March 1, 2017, Yueqing Chint Photovoltaic Power Generation Co., Ltd. organized the design, supervision, construction and other

The project is put into trial operation for acceptance and a trial operation acceptance and handover production acceptance certificate is prepared.

8. On January 25, 2018, the Development and Reform Bureau, Economic and Information Bureau, Land and Resources Bureau, Housing and Urban-Rural Development Bureau, Environmental Protection Bureau, Agriculture and Forestry Bureau,

Ocean and Fisheries Bureau, State Grid Wenzhou Power Supply Company, Central District Management Committee, Shenglitang Reclamation Project Command, Chengdong Street

The provincial and municipal departments conducted on-site inspections of the project, reviewed the project materials, and conducted a preliminary acceptance inspection;

9. On May 3, 2018, the Development and Reform Bureau of Yueqing City issued a notice on the same

Letter of completion and acceptance of Yileqing Zhengtai's 150 MW agricultural photovoltaic power generation project;

10. On July 20, 2021, the Wenzhou Water Conservancy Bureau issued a notice on the

Approval of the soil and water conservation plan for Chint’s 150 MW agricultural photovoltaic power generation project;

11. In August 2021, Yueqing Chint Solar Power Generation Co., Ltd. and Zhejiang Jiantou Environmental Protection Engineering Co., Ltd. and other related

The staff conducted a comprehensive survey of the Yueqing Chint 150 MW agricultural photovoltaic power generation project;

12. In September 2021, Zhejiang Jiantou Environmental Protection Engineering Co., Ltd. completed the acceptance report of the soil and water conservation facilities of the project.

Report and make a subsequent filing.

Annex 2

国有农用地使用权租赁合同

出租方（简称“甲方”）：乐清市农业局

单位法人：章显岳

地址：伯乐东路 888 号

邮编：325600 传真：057761880298

承租方（简称“乙方”）：乐清正泰光伏发电有限公司

企业法人：仇展炜

营业执照号码：330382000309868(1/1)

注册地址：乐清市柳市镇上园工业区正泰大楼三楼

邮编：325603 传真：

根据国家有关法律法规和乐清市人民政府常务会议纪要〔2015〕8 号，乙方向甲方租赁国有土地使用权（以下简称“土地使用权”）。为明确双方的权利与义务，订立本合同。

第 1 条 土地使用权租赁范围

1.1 乙方向甲方租赁位于浙江省乐清市胜利塘北片造地区块的地块，总面积 3879.7 亩（以下称“租赁土地”），土地性质为国有。该租赁土地的位置与详细范围见本合同附件一，需经双方确认，构成本合同之一部分。

1.2 上述租赁土地的土地使用权系通过市政府授权甲方方式取得，甲方对该土地有合法出租的权利。

1 / 7

第 2 条 租赁期限

2.1 土地使用权租赁期限为 20 年，自 2015 年 9 月 18 日至 2035 年 9 月 17 日止。合同到期后，双方按本合同条款可另签订 5 年续租合同。

2.2 经甲乙双方同意，乙方可以在本条第 1 款租赁期满前的任何时候终止租赁本合同项下部分或全部土地使用权，但乙方须在其所要求的终止日前 6 个月书面通知甲方。乙方终止租赁本合同项下部分或全部土地使用权前，必须拆除清理地上所有设施，并复垦耕地交还给甲方。

2.3 本合同的租赁期限到期后，乙方对所租赁的土地在同等条件下具有优先租赁权。

第 3 条 租赁用途

乙方在不改变农业种植的土地性质前提下，结合光伏发电项目建设使用；乙方需在半年内将种植方案报甲方，由甲方邀请相关专家召开论证会，确定种植方案的可行性，若种植方案专家评审通不过，由乙方负责修改，直到种植方案专家评审通过为止；一年内开展农作物种植，乙方根据通过的种植方案实施种植。乙方负责光伏电站审批和建设。

第 4 条 租赁土地交付使用

4.1 甲方自本合同正式生效之日起 7 天内将不存在纠纷的土地使用权交付乙方。若以后发生纠纷，甲方解决纠纷。甲方对尚未具备交付条件的土地使用权在本合同正式生效之日起待乙方完成土地整治

2 / 7

项目后交付乙方。

甲方确认交付前将土地上所有设施及作物处理完毕，乙方无需向甲方支付任何土地补偿或青苗补偿等费用。自本协议生效之日起，甲方未处理的租赁土地上的设施及原种植作物，乙方可自行处置，并无需任何补偿。

4.2 乙方在甲方将该土地使用权交付之日起，必须依照合同约定的土地用途实施相应的经营、管理、使用等行为。

第 5 条 租金及支付方式

5.1 土地使用权的租金按照人民币 600（陆佰）元/亩·年计算，租金每过 5 年递增 10%。乙方每次付清当年租金，第一年租金支付时间为合同签订后半个月内，第二年租金支付时间为 2016 年 9 月 18 日，以后类推。租金支付数额按照交付乙方使用的面积计算。

乙方逾期未付的租金，甲方每天按千分之三收取滞纳金，乙方逾期支付时间超过 3 个月的，则本合同自动终止，甲方依法追索乙方所欠租金。

5.2 经甲乙双方同意，对于按照本合同的规定终止使用的部分土地，乙方支付甲方的总租金数额应依终止使用土地的亩数做相应减少。

第 6 条 甲方提前收回与补偿

6.1 提前收回

本合同存续期间，甲方不得提前收回土地使用权。如有以下事项之一，甲方应当提前 6 个月书面通知乙方，本合同提前终止，甲方依

照法定程序提前收回土地使用权。

6.1.1 因国家能源、水利等基础设施用地需要使用该幅土地的；

6.1.2 因国家国防建设需要使用该幅土地的；

6.1.3 政府批准的道路、管线工程、市政基础设施、大型基础设施建设项目需要使用该幅土地的；

6.1.4 国务院批准的建设项目需要使用该幅土地的；

6.1.5 为实施城市规划建设需要使用该幅土地的；

6.1.6 依照法律、行政法规需要使用该幅土地的；

6.2 补偿

6.2.1 依照前款各项使得本合同提前终止的，甲方应退还乙方多缴纳的租金；

6.2.2 依照前款各项使得本合同提前终止的，未占用的土地部分继续有效；

6.2.3 依照前款各项使得本合同提前终止的，甲方应对乙方给予合理补偿。补偿方案由双方协商确定。

6.3 若非因 6.1 条所述原因，因甲方原因导致乙方不能继续合法正常使用租赁土地，甲方应赔偿乙方的损失，损失包括但不限于：在未实现的租赁期间内，乙方在租赁土地上所建设光伏电站的预期收益；因为拆迁电站的实际支出。

第 7 条 双方的权利和义务

7.1 甲方的权利和义务

7.1.1 甲方依据本合同约定向乙方收取租金，协助乙方办理相关

4 / 7

土地租赁的登记、审批及备案手续。

7.1.2 甲方监督乙方依据本合同约定使用土地，有权对乙方农作物种植情况开展日常监督检查。乙方未征得甲方同意，擅自改变用途经甲方催告后三个月内拒不改正的，甲方有权收回相关土地的土地使用权，并不做任何补偿。

7.1.3 本合同期满不再延续的，甲方有权收回该土地的土地使用权。并监督乙方清理地上物和耕地复垦。

7.1.4 租赁期内，甲方不得干涉乙方对该等土地使用权按合同约定的正常使用。

7.1.5 租赁期间，甲方对该土地相邻土地行使权利不得妨碍乙方对承租土地行使正当权利。

7.2 乙方的权利和义务：

7.2.1 乙方有权依据本合同约定使用土地。

7.2.2 乙方须向甲方按本合同约定及时支付租金。

7.2.3 乙方须根据本合同约定用途使用土地，并接受甲方监督。

7.2.4 乙方保护和维修好租赁土地范围内的机耕道路、水沟、泵房等农田水利设施，乙方施工不能损坏桥梁、河道等设施，否则应负责维修好；乙方保证在租赁的土地上全部种植农作物，禁止抛荒；乙方保证在租赁的土地上保护好良好的耕作特性，土地耕作层不得破坏、污染；乙方做好租赁土地地块的排洪防洪、安全生产等工作。

7.2.5 租赁期满不再续租的，乙方须及时、完整地恢复租赁土地原貌（指拆除在原土地上增加的设施设备和水泥桩、耕地复垦等，相

关费用乙方负责），向甲方交回全部租赁土地。

7.2.6 乙方不得将租赁的土地使用权进行转让、转租、抵押，但不影响乙方以光伏电站项目资产抵押。

第 8 条 合同的变更和终止

8.1 对本合同的任何变更，须经双方同意，并以书面形式作出方可生效。

8.2 本合同按下列方式终止：

8.2.1 本合同租赁期限届满，且乙方不再续租。

8.2.2 本合同有效期限内双方达成终止协议。

8.2.3 本合同任何一方因地震、风暴、水灾、战争等不可抗力丧失继续履行本合同的能力，或者所租赁土地已经无法用于本合同约定用途的。

8.2.4 根据法律、法规的规定，或有管辖权的法院或仲裁机构所做出的终止本合同的判决、裁定或决定而终止本合同。

第 9 条 违约责任及损害赔偿

任何一方违反本合同约定，另一方可以要求或采纳本合同和法律所允许的补救措施，包括但不限于实际履行经济损失和补偿经济损失。

每年发现土地抛荒的，甲方告知乙方后三个月内拒不改正的，抛荒面积由甲方丈量，甲方收取乙方土地抛荒费人民币 2000（贰仟）元/亩。

第 10 条 其他规定

6 / 7

10.1 合同及其附件构成双方全部合同内容，双方以前就该等事项而达成的协议、合约、理解和通信不作为合同的构成内容。

10.2 本合同附件是本合同不可分割的组成部分，并与本合同具有同等约束力，如同已被纳入本合同。

第 11 条 适用法律和争议的解决

凡因本合同引起的或与本合同有关的任何争议，由甲乙双方协商解决。若协商不成，甲、乙任何一方均可将该等争议提交温州仲裁委员会仲裁。

第 12 条 附则

本合同构成甲乙双方目前有关本合同主题事宜的全部内容。其他未尽事宜，可由双方今后友好协商另行签订补充合同解决。

本合同正本一式四份，双方各执两份，法人代表签字并加盖公章后生效，各份合同具有同等效力。

甲方（盖章）：乐清市农业局

法人代表（签字）：

乙方（盖章）：乐清正泰光伏发电有限公司

法人代表（签字）：

签订日期：2015 年 9 月 18 日

7 / 7

Annex 3

乐清市发展和改革局
企业投资项目备案通知书（基本建设）

乐发改备[2015]87号

（浙江省企业投资项目备案系统）建设项目备案号：0382151029404012482 8

项目单位	乐清正泰光伏发电有限公司	法定代表人	仇展炜
建设项目名称	乐清正泰 150 兆瓦农光互补光伏发电项目	项目所属行业	电力、热力的生产和供应业
拟建地址	乐清市乐成镇城东街道胜利塘北片围区造地区块	建设年限	2015-10 到 2016-10
建设内容	总容量为 150 兆瓦太阳能光伏电站，安装光伏组件、逆变器、150MW/110kV 光伏升压变电站等光伏设备，2 回 110kV 线路送出 T 接慎海变电站，同时结合现代农业开发种植经济农作物。项目占地约 4000 亩。项目建成后 25 年内年均发电量 14481 万千瓦时。		
项目总投资	总投资：212000 万元，其中 固定资产投资：209000 万元（土建 14000 万元；设备 168000 万元；安装 10000 万元；工程建设其他费用 10000 万元；预备费 7000 万元），铺底流动资金 3000 万元。		
企业投资项目主管部门意见	准予备案，有效期壹年。 （盖 章） 二〇一五年十月二十九日		

备注：

备案通知书有效期壹年，自备案之日起计；有效期内未开工建设的，项目业主应在备案通知书有效期满 30 日前向我局申请延期。逾期不报，备案通知书自动失效。

Annex 4

乐清市住房和城乡规划建设局文件

乐住规建发〔2016〕459 号

乐清市住房和城乡规划建设局 关于乐清市西干河南单元 0577-YQ-YY-09-01-01 出让地块（150 兆瓦 农光互补光伏发电项目升压变电站） 规划设计条件的复函

乐清市国土资源局：

贵局《关于要求提供乐清市 2015 年 135 号出让地块规划红线图及相关规划参数的函》（乐土资函〔2016〕266 号）文件收悉，要求提供关于乐清市西干河南单元 0577-YQ-YY-09-01-01 出让地块（即乐清市 2015 年 135 号地块）的经济技术指标。经集体研究，决定以下列规划设计条件作为该地块的规划设计依据，中标单位必须严格遵照规划设计条件进行设计，不得突破规划设计条件规定的经济技术指标：

一、用地情况

- 1 -

出让地块面积：10009 平方米。

东南至非建设用地，西南至非建设用地，西北至非建设用地，东北至规划 24 米道路。

二、用地使用性质

使用性质：供电用地。

三、用地使用强度

1. 容积率：≤0.5。

2. 建筑密度：≤30%。

四、建筑设计要求

1. 计入容积率指标的地上总建筑面积：≤5004 平方米。（地下室除作为车库及消防、人防、配电等公共配套设施用房外，其余建筑面积另行缴纳土地出让金。）

2. 建筑高度：≤24 米（层数≤6 层）。

3. 建筑后退

东南退用地红线：≥1.5 米；

西南退用地红线：≥3 米；

西北退用地红线：≥3 米；

东北退用地红线：≥5 米。

4. 交通出入口方位：东北侧规划 24 米道路。

5. 停车泊位：按《乐清市城市规划管理技术规定（试行）》（2014 版）设置。

6. 地下室建设必须按人防规定要求进行；架空层只能做公共活动空间，不得围合封闭，不得出售；地下室和架空层的建筑面

积在方案会审时确定。

7. 绿化：绿地率≥20%。

8. 竖向：与周边道路相衔接，待方案会审时确定。

9. 建筑间距等未尽事宜要遵守《乐清市城市规划管理技术规定（试行）》（2014 版）有关规定。

五、城市设计要求

建筑形式与风格宜现代、简洁；建筑色彩宜低彩的灰色或明度对比高的冷色调。

六、市政要求

落实其他各项市政配套设施。

七、配套要求

1. 落实自身各项配套设施及相应用房。

2. 用地红线范围内的绿化，均由中标单位负责实施建设，要求同时设计，同时施工，同时交付。

八、其他

1. 临时施工围墙须退周边城市道路 1 米以上，并保证施工期间的道路、河流畅通及卫生；竣工验收前或因道路建设需要，临时围墙自行拆除。

2. 围墙临城市道路设置时，在满足城市景观要求的前提下，退道路红线距离不小于 1 米。

3. 建设单位应当按照计入容积率的地上总建筑面积千分之七的比例配置物业管理用房（包含在总建筑面积之中）。

4. 相关事宜按照《乐清西干河南单元 0577-YQ-YY-09-01-01

- 3 -

地块控制性详细规划》和国家有关法律、法规、政策及技术规范执行。

5. 满足日照、消防、人防、防雷、环保等相关要求。

九、遵守事项

1. 持本通知书委托具有符合承担本工程设计资格及业务范围的设计单位进行方案设计。

2. 本通知书中所列规划设计条件是我局审批设计方案的依据，设计单位必须严格按本条件内容进行规划设计，不得任意更改和违反。

3. 本文件附图 1 份，图文一体方为有效文件。

4. 本文件有效期壹年，逾期自行作废。

附件：1. 规划用地红线图（编号 2016153）

2. 乐土资函〔2016〕266 号

乐清市住房和城乡规划建设局

2016 年 6 月 27 日

- 4 -

Annex 5

中华人民共和国

建设用地规划许可证

地字第浙规证2016-038200188号

根据《中华人民共和国城乡规划法》第三十七、第三十八条规定，经审核，本用地项目符合城乡规划要求，颁发此证。

发证机关

日　　期　2016-10-11

用地单位	乐清正泰光伏发电有限公司
用地项目名称	乐清正泰150兆瓦农光互补光伏发电
用地位置	乐清市中心区胜利塘围垦地块
用地性质	供电用地
用地面积	净用地面积：10009平方米 另：道路0平方米，绿化带0平方米
建设规模	

附图及附件名称

乐住规建发[2016]459号 规划红线图

遵守事项

一、本证及经城乡规划主管部门依法审核、建设用地符合城乡规划要求的法律凭证。

二、未取得本证，而取得建设用地批准文件、占用土地的，均属违法行为。

三、未经发证机关审核同意，本证的各项规定不得随意变更。

四、本证所需附图与附件由发证机关依法确定，与本证具有同等法律效力。

本证有效期为一年，一年内未取得用地批准文件的，又未经我局同意延期的，本证自行作废。

No 332015012843

Annex 6

乐清乐成中心城区开发建设管理委员会

会议纪要

〔2016〕19 号

乐清乐成中心城区管委会办公室　　二〇一六年十月十九日

乐清市中心区胜利塘围垦片正泰 150 兆瓦农光互补发电项目建筑方案设计会审纪要

2016 年 10 月 14 日，乐清乐成中心城区管委会邀请专家和有关单位的工程技术人员，在乐清市行政中心主楼三楼 1 号会议室对乐清市中心区胜利塘围垦片正泰 150 兆瓦农光互补发电项目建筑方案设计进行了会审。与会人员认真听取了浙江省电力设计院设计人员介绍后，对方案进行讨论，原则上予以通过并提出修改意见，现将意见纪要如下：

一、完善方案文本设计，达到方案设计文本深度要求。

二、补充土地出让合同、发改备案、控规图则、规划设计条件等。

三、完善说明篇章部分，补充节能专篇、投资估算等。

四、总平功能分区应明确，合理布置各单体内部功能。

五、补充区位图和周边规划道路情况。

六、满足消防相关规范要求。

七、补充 1:500 总平蓝图，完善经济技术指标；补充建筑尺寸和角点坐标标注，补充风玫瑰图，适当提高场地地坪标高设计。

八、建议建筑外立面设计和正泰一贯建筑形象相协调。

附件：会议签到薄

乐清乐成中心城区开发建设管理委员会

2016 年 10 月 19 日

2

乐清乐成中心城区管委会会议签到薄

会议内容： 正泰150兆瓦农光伏发电项目方案设计、中心区A-d10地块（文化产业园）方案调整

姓名	单位	职务/职称	联系电话
[illegible]	正泰		13777702978
张希鹏	浙江省电力设计院		15757102521
[illegible]	正泰		13738008447
[illegible]	正泰		18158131188
[illegible]	[illegible]		13757875998
[illegible]	宣传部		13858891163
[illegible]	[illegible]		13905873957
[illegible]	市住建局		
[illegible]	〃		13918762200
[illegible]	[illegible]		18367899976
[illegible]	[illegible]		
[illegible]	浙江新宇建筑设计有限公司		13968700656
[illegible]	〃 〃		13806603455
[illegible]	中心城区		
[illegible]	中心城区		
[illegible]	温州文创		13868624444
[illegible]	温州文创		15810857199
[illegible]	[illegible]设计集团股份有限公司		15958198204.

Annex 7

国网浙江省电力公司温州供电公司部门文件

温电营字〔2016〕60号

关于乐清正泰150兆瓦农光互补光伏发电站并网接入启动协调会纪要

营销部(客户服务中心),运维检修部,建设部,电力调度控制中心,变电运维室,变电检修室,信息通信分公司,国网乐清市供电公司,乐清正泰光伏发电有限公司:

2016年11月18日,在国网温州供电公司大楼702室召开乐清正泰150兆瓦农光互补光伏发电站并网接入启动协调会。参加会议的有市公司相关部室及国网乐清市供电公司、乐清正泰光伏发电有限公司等相关人员。会上各相关部室及乐清正泰光伏发电有限公司汇报了乐清正泰150兆瓦农光互补光伏发电站中的各自分工和相关工作完成情况,对并网接入前有关事项进行了讨论,现将会议明确的有关事项纪要如下:

— 1 —

一、乐清正泰150兆瓦农光互补光伏发电站（以下简称业主方）投运时间定于2016年11月20日早上9点。

二、乐清电力实业有限公司应于11月20日前，完成110千伏龙慎乐1385线和110千伏龙海泰1384线线路一次定相、线路参数测试及继电保护定值的执行工作。

三、业主机组发电出力时，输送限额：110千伏龙慎乐1385线控制600安培（春秋季）、511安培（夏季）；110千伏龙海泰1384线控制600安培（春秋季）、511安培（夏季）。

四、并网接入时，为确保主变和线路带负荷试验的顺利进行，业主方必须提供以下负荷试验所必需的负荷。具体负荷试验如下：220千伏龙山变龙慎乐1385线和龙海泰1384线线路保护，110千伏母差保护带负荷试验；110千伏慎海变龙慎乐1385线和龙海泰1384线线路保护，110千伏备自投带负荷试验；110千伏乐泰光伏站龙慎乐1385线和龙海泰1384线线路保护，110千伏母差保护，110千伏母分过流解列保护，1号和2号主变差动保护带负荷试验、安全自动装置带负荷试验。

五、变电检修室、乐清电力实业有限公司及业主方安排做好并网接入时220千伏龙山变、110千伏慎海变和110千伏乐泰光伏站带负荷试验的人员安排。

六、业主方应明确电厂电量统计人员的名单及联系方式并报市公司客户服务中心采集维护班备案。

七、市公司客户服务中心检测二班安排做好投运后电能表的

校核工作。

八、业主方应将电能质量在线监测数据传送至省电科院。

九、业主方根据信息通信分公司检验意见逐一进行整改，并及早将相关整改结果提交信息通信分公司。

十、客户服务中心市场拓展班负责与乐清正泰光伏发电有限公司签订购售电合同与供用电合同。

十一、确定本次与会人员为乐清正泰光伏发电站并网接入启动协调会小组成员，明确乐清正泰光伏发电站黄晓（联系电话：13777702978）为乐清正泰光伏发电站启动协调小组总联络人，市公司客户服务中心周天红（联系电话：13857732972）为国网温州供电公司启动协调小组总联络人。

附件：会议签到单

国网温州供电公司

2016年11月21日

国网浙江省电力公司温州供电公司营销部

国网浙江省电力公司温州供电公司办公室 2016年11月21日印发

— 3 —

乐清正泰光伏发电有限公司

乐泰光伏站

启动验收会议纪要

乐清正泰光伏发电有限公司

2017 年 3 月 1 月

验收主持单位：乐清正泰光伏发电有限公司

生产运行单位：乐清正泰光伏发电有限公司

设计单位：中国能源建设集团浙江省电力院有限公司

监理单位：浙江华东工程咨询有限公司

施工单位：江苏华能建设工程有限公司
江苏天力建设集团有限公司

验收时间：2017 年 3 月 1 日

根据《光伏发电工程验收规范》（GB/T50796－2012）、《光伏系统并网技术要求》（GB/T19939－2005）、《电力建设工程质量监督检查典型大纲》（光伏发电部分）及其他有关规范标准的相关规定，乐清正泰光伏发电有限公司依据乐清正泰光伏发电项目启动委员会确定的验收组织结构、组织项目相关的设计、监理、施工等参建单位，于 2017 年 3 月 1 日，在乐泰光伏站会议室召开启动验收会议，对乐清正泰光伏发电项目组织进行了工程试运行的验收工作。工程启动验收主要从土建工程、电气设备、光伏组件、生产情况准备工作等逐项进行验收工作。验收主要包括内部验收、整改项目闭环情况、电站设备无缺陷投运及达到设计参数后移交运维单位的相关项目验收。

一、工程概况

浙江正泰乐清 150MWp 太阳能农光互补地面电站项目位于浙江省乐清市乐成镇胜利塘北片围，地理坐标坐标约为北纬 28° 07′ 30，东经 121° 01′ 30。项目占地面积 4500 亩，总装机容量 150MW，电站出线采用 II 回 110KV 架空线路“T”接入龙山－慎海线，属浙江省电力公司统调电厂。本项目采用大功率 310wp/315wp 的多晶硅电池组件，每 18 块太阳能组件串联为一条支路接到逆变器直流侧，每台逆变器接入 7 条支路，通过 150 台箱式变压器分成 10 条集电线路至 35KV 汇集站，再经两台主变压器升压至 110KV 接入国家电网。

2015 年 10 月项目土建工程开工；2016 年 11 月 10 日，完成了浙江省电力工程建设质量监督中心站验收；2016 年 11 月 17 日，完成省电力公司五大专业验收；2016 年 11 月 20 日，乐泰光伏站并网发电，2016 年 12 月 20 日，1#－10#机组全部投入运行，正式进入生产发电阶段。

二、生产准备情况

乐清正泰光伏发电有限公司协同相关职能部门制定了乐泰光伏站生产准备计划，并按照计划及时编制完成了乐泰光伏站生产准备大纲、运行规程（试行）、电气一次系统图、典型操作票、事故应急预案等相关技术资料。

根据设计图纸及电力公司提供的主要设备调度命名提早进行编制，并及时联系标牌制作厂家，确保了在设备试验前完成设备及安全标识的制作和安装。

编制光伏发电单体及整体试运大纲，组织调试单位、监理单位及电厂各相关专业人员对各项方案进行讨论，并经过多次修改，最终形成多

方认可的调试、启动方案，为顺利推进调试工作打下了基础。
积极联系电网公司，并保持沟通，及时了解掌握并网验收的过程及具体要求，根据电网公司提供的验收材料清单，认真细致的整理相关资料，先后完成了国网温州供电公司组织的初验和国网浙江省电力公司组织的五大专业验收。
三、设备试运行情况
乐泰光伏站自 2016 年 12 月 20 日并网发电以来，通过四个多月的试运行，各设备系统运行正常，未出现因设备或人为原因造成的事故，已累计完成发电量 1500 多万，达到了预期的设计要求。
四、存在的问题及处理意见
当前项目进入尾工及消缺阶段，经现场检查，主要存在以下问题：
1、部分光伏组件支架、管桩顶部钢带防腐工作未全部完成；
2、部分光伏支架紧固拉杆未全部紧固完成；
3、部分组件支路电缆施工不规范，未按要求挂设电缆标签；
4、部分光伏支架接地线施工不规范；
5、部分箱变、汇流箱电缆孔洞封堵不到位
以上尾工及消缺项目已召开协调会，按照会议要求需及时完成整改。
五、意见和建议
无
六、验收结论
乐清正泰光伏发电有限公司乐泰光伏站整体施工已完成，土建、电气、调试等相关单体工程已完成验收并验收合格。各项试运行及生产准备条件完善。各项并网措施已经电网验收合格。乐泰光伏站已通过启动验收，具备投运条件。
附：乐清正泰光伏发电有限公司乐泰光伏站工程启动验收组成员签字表

乐清正泰光伏发电有限公司

2017 年 3 月 1 日

乐清正泰光伏发电有限公司乐泰光伏站
工程启动验收组成员签字表

工程试运和移交生产验收组	单位	职务	签字
	乐清正泰光伏发电有限公司	站长	李白锋
	乐清正泰光伏发电有限公司工程项目部	项目经理	李宝林
	江苏华能建设工程有限公司		李明生
	江苏天力建设集团有限公司		杨福生
	浙江华东工程咨询有限公司	总监	吕士福

Annex 8

乐清正泰光伏发电有限公司乐泰光伏站试运验收和移交生产验收鉴定书

鉴定书

2017 年 3 月 1 日

验收主持单位：乐清正泰光伏发电有限公司

生产运行单位：乐清正泰光伏发电有限公司

设计单位：中国能源建设集团浙江省电力院有限公司

监理单位：浙江华东工程咨询有限公司

施工单位：江苏华能建设工程有限公司

江苏天力建设集团有限公司

验收时间：2017 年 3 月 1 日

根据《光伏发电工程验收规范》（GB/T50796－2012）、《光伏系统并网技术要求》（GB/T19939－2005）、《电力建设工程质量监督检查典型大纲》（光伏发电部分）及其他有关规范标准的相关规定，业主单位乐清正泰光伏发电有限公司依据乐清正泰光伏发电项目启动委员会确定的验收组织结构、组织项目相关的设计、监理、施工等参建单位，以及省电力工程质量监督中心站、省电力公司调度中心、乐清市相关政府监管部门，对乐清正泰光伏发电项目组织进行了工程试运行的验收工作。工程试验收主要从土建工程、电气设备、光伏组件、生产情况准备工作等逐项进行验收工作。移交生产验收主要包括内部验收、整改项目闭环情况、电站设备无缺陷投运及达到设计参数后移交运维单位的相关项目验收。另外，对于光伏电站相关的《购售电合同》、《供用电合同》、《并网调度协议》等相关手续进行了复核。

一、工程概况

浙江正泰乐清 150MWp 太阳能农光互补地面电站项目位于浙江省乐清市乐成镇胜利塘北片围，地理坐标坐标约为北纬 28° 07′ 30，东经 121° 01′ 30。项目占地面积 4500 亩，总装机容量 150MW，电站出线采用 II 回 110KV 架空线路“T”接入龙山一慎海线，属浙江省电力公司统调电厂。本项目采用大功率 310wp/315wp 的多晶硅电池组件，每 18 块太阳能组件串联为一条支路接到逆变器直流侧，每台逆变器接入 7 条支路，通过 150 台箱式变压器分成 10 条集电线路至 35KV 汇集站，再经两台主变压器升压至 110KV 接入国家电网。

2015 年 10 月项目土建工程开工；2016 年 11 月 10 日，完成了浙江省电力工程建设质量监督中心站验收；2016 年 11 月 17 日，完成省电力公司五大专业验收；2016 年 12 月 20 日，乐泰光伏站并网发电，正式进入生产发电阶段。

二、生产准备情况

乐清正泰光伏发电有限公司协同相关职能部门制定了乐泰光伏站生产准备计划，并按照计划及时编制完成了乐泰光伏站生产准备大纲、运行规程（试行）、电气一次系统图、典型操作票、事故应急预案等相关技术资料。

根据设计图纸及电力公司提供的主要设备调度命名提早进行编制，并及时联系标牌制作厂家，确保了在设备试验前完成设备及安全标识的制作和安装。

编制光伏发电单体及整体试运大纲，组织调试单位、监理单位及电厂

各相关专业人员对各项方案进行讨论，并经过多次修改，最终形成多方认可的调试、启动方案，为顺利推进调试工作打下了基础。

积极联系电网公司，并保持沟通，及时了解掌握并网验收的过程及具体要求，根据电网公司提供的验收材料清单，认真细致的整理相关资料，先后完成了国网温州供电公司组织的初验和国网浙江省电力公司组织的五大专业验收。

三、设备备品备件、工器具、资料等清查交接情况

光伏相关设备备品备件、工器具、专用工具等已清点完毕，工程相关设备技术资料已整理，办理交接手续。

四、存在的问题及处理意见

当前项目进入尾工及消缺阶段，经现场检查，主要存在以下问题：

1、部分光伏组件支架、管桩顶部钢带防腐工作未全部完成；

2、部分光伏支架紧固拉杆未全部紧固完成；

3、部分组件支路电缆施工不规范，未按要求挂设电缆标签；

4、部分光伏支架接地线施工不规范；

5、部分箱变、汇流箱电缆孔洞封堵不到位

以上尾工及消缺项目已召开协调会，按照会议要求需及时完成整改。

五、意见和建议

无

六、验收结论

乐清正泰光伏发电有限公司乐泰光伏站整体施工已完成，土建、电气、调试等相关单体工程已完成竣工验收并验收合格。各项试运行及生产准备条件完善。各项并网措施已经电网验收合格。已圆满完成试运行并移交生产运维单位，项目整体运行情况正常。

七、验收组成员签字

见“乐清正泰光伏发电有限公司乐泰光伏站工程试运行和移交生产验收组成员签字表”

乐清正泰光伏发电有限公司
乐泰光伏站项目工程试运和
移交生产验收
主持单位（盖章）：

2017 年 3 月 1 日

乐清正[illegible]有限公司
乐泰光[illegible]
移交生[illegible]
接收单[illegible]

2017 3 1 日

乐清正泰光伏发电有限公司[illegible]站
工程试运和移交生产验收组[illegible]表

工程试运和移交生产验收组	单位	职务	[illegible]
	乐清正泰光伏发电有限公司	站长	李河舞
	乐清正泰光伏发电有限公司工程项目部	电气工程师	李富林
	江苏华能建设工程有限公司		余网金
	江苏天力建设集团有限公司		杨福生
	浙江华东工程咨询有限公司	总监	吕子福
	国网温州供电公司		周凯

Annex 9

乐清市发展和改革局文件

乐发改〔2018〕48 号

关于同意乐清正泰 150 兆瓦农光互补光伏发电项目竣工验收的函

乐清正泰光伏发电有限公司:

你单位报送的乐清正泰 150 兆瓦农光互补光伏发电项目竣工验收材料收悉。根据《浙江省光伏发电项目管理暂行办法》（浙发改能源〔2014〕450 号）,2018 年 1 月 25 日，市发改局、经信局、国土局、住建局、环保局、农林局、海洋与渔业局、国网温州供电公司、中心区管委会、市胜利塘围垦工程指挥部、城东街道等部门联合对该项目进行了实地踏勘，并审阅了项目资料，现将相关事项函告如下:

一、项目概况

乐清正泰 150 兆瓦农光互补光伏发电项目,项目业主为

乐清正泰光伏发电有限公司，项目位于乐清市城东街道胜利塘北片围区造地区块，项目占地面积约 3880 亩，项目动态投资约 15 亿元。装机总容量为 150 兆瓦，设计安装光伏组件、逆变器、150MW/110kV 光伏升压变电站等光伏设备，2 回 110kV 线路接入温州电网，同时结合现代农业开发种植经济农作物。设计寿命 25 年，项目建成后 25 年内年均发电量约为 15000 万千瓦时。

二、项目建设情况

该项目于 2015 年 10 月 29 日，乐清市发改局以（乐发改备〔2015〕87 号）予以备案，2016 年初投产建设，2016 年 11 月 20 日完成线路并网，正式投运。截至 2018 年 1 月 23 日，已累计发电 14658.864 万千瓦时，系统运行良好。光伏板下种植水稻、油菜和豌豆等农作物。

三、指导意见

该项目选用的光伏组件、并网逆变器等主要设备符合国家光伏发电项目要求，项目设计合理、技术可行、建设规范，相关工程技术资料齐全，同意专家组关于“同意通过验收”的验收意见。建议业主单位根据《国家能源局关于进一步加强光伏电站建设与运行管理工作的通知》（国能新能〔2014〕445 号）的要求，加强制度建设、运行管理和日常维护，充分发挥光伏发电的积极作用。

- 2 -

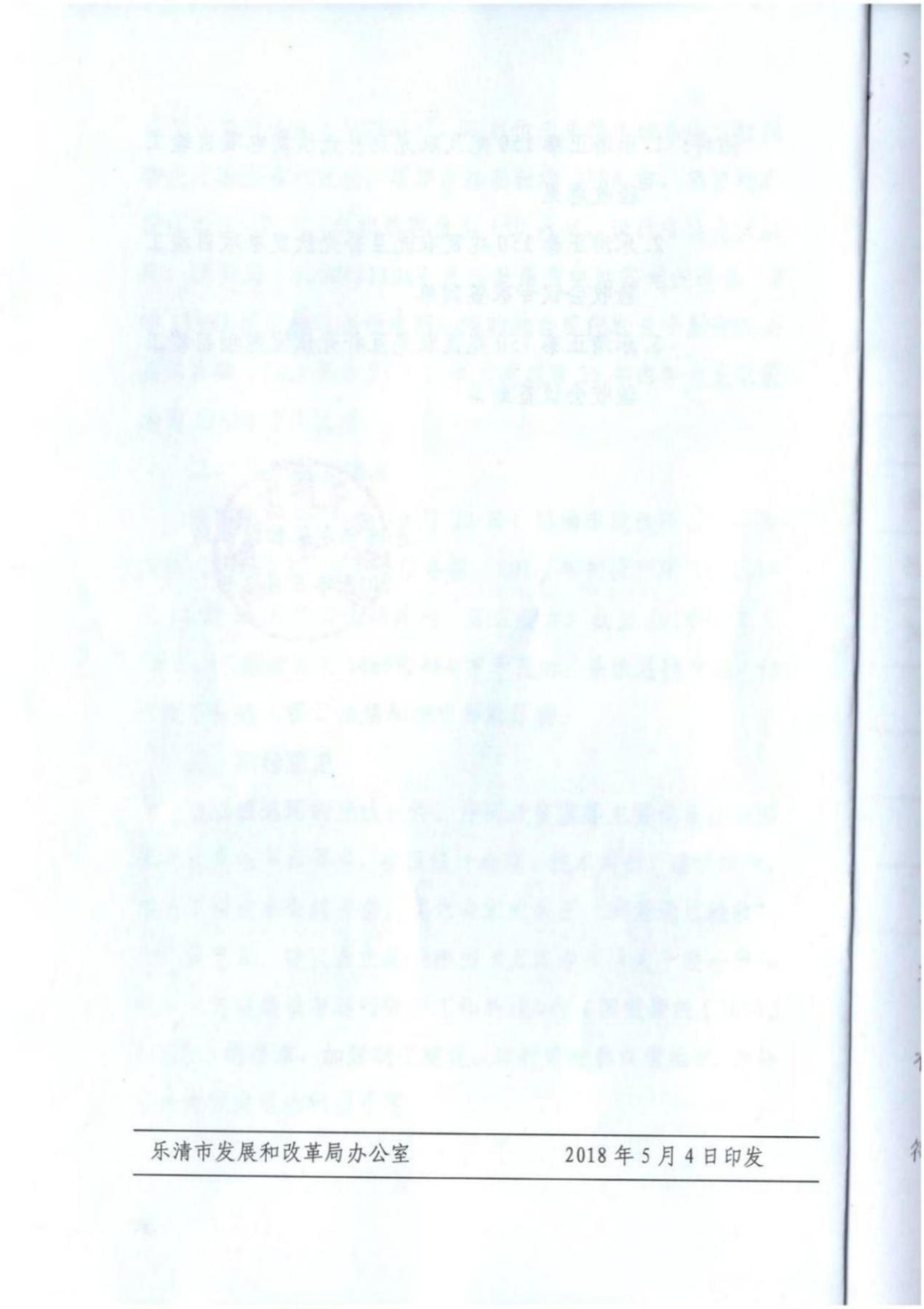
附件：1. 乐清正泰 150 兆瓦农光互补光伏发电项目竣工验收意见

2. 乐清正泰 150 兆瓦农光互补光伏发电项目竣工验收会议专家签到单

3. 乐清正泰 150 兆瓦农光互补光伏发电项目竣工验收会议签到簿

乐清市发展和改革局

2018 年 5 月 3 日



乐清市发展和改革局办公室 2018 年 5 月 4 日印发

乐清正泰光伏发电有限公司
乐清正泰 150 兆瓦农光互补光伏发电项目
竣工验收意见

2018 年 1 月 25 日上午，乐清市发展和改革局主持召开了乐清正泰 150 兆瓦农光互补光伏发电项目竣工验收会议。参加会议的有发改局、经信局、国土局、住建局、环保局、农林局、海洋与渔业局、国网温州供电公司、中心区管委会、市胜利塘围垦工程指挥部、城东街道、乐清正泰光伏发电有限公司，以及项目设计、监理、施工单位代表，并邀请了有关专家。与会人员实地踏勘了现场，听取了项目汇报，对项目设计、工程安装、运行情况等内容进行了审查。经讨论，形成以下验收意见:

一、项目业主提供了市政府项目土地的协调纪要文件、项目备案文件、项目并网启动投产方案、供电公司并网验收意见单等前期资料。

二、项目符合《国务院关于促进光伏产业健康发展的若干意见》（国发【2013】24 号）、《浙江省人民政府关于进一步加快光伏应用促进产业健康发展的实施意见》（浙政发【2013】49 号）等文件要求，对促进乐清市光伏产业发展具有重要意义。

三、项目主要设备（光伏组件、并网逆变器等）的选择符合国家光伏发电项目要求，项目设计合理、技术可行、建

设规范。

四、乐清正泰 150MWp 农光互补光伏发电项目，选址于乐清市城东街道胜利塘北片围区造地区块，项目用地面积 3880.79 亩，总安装容量 150MWp，设计寿命 25 年。以 2 回路 110kV 线路接入温州电网。本项目于 2016 年初投产建设，于 2016 年 11 月完成线路并网。截至 2018 年 1 月 23 日，已累计发电 14658.864 万 KWh，系统运行良好。部分光伏板下种植油菜、豌豆等作物。

五、建议业主单位根据《国家能源局关于进一步加强光伏电站建设与运行管理工作的通知》（国能新能【2014】445 号）的要求，加强制度建设、运行管理和日常维护。

六、同时根据验收会议专家提出的意见，补充完善验收材料：

1、提供关键部件（组件、逆变器）型号、生产厂家、国家认证文件。

2、增加编入接入系统方案批复文件、设计、施工、监理、运维等总结报告。

3、增加编入农业种植实施方案及年度投资计划，达到农光互补的要求。

与会人员认为项目取得了较为明显的社会、经济效益，达到节能减排示范作用，同意通过验收。

专家组成员：

2018 年 1 月 25 日

Annex 10

温州市水利局文件

温水许〔2021〕27号

温州市水利局关于乐清正泰150兆瓦农光互补光伏发电项目水土保持方案的批复

乐清正泰光伏发电有限公司:

你单位（统一社会信用代码：91330382090982668K）《关于要求审批“乐清正泰150兆瓦农光互补光伏发电项目”的申请报告》及委托浙江建投环保工程有限公司编写的《乐清正泰150兆瓦农光互补光伏发电项目水土保持方案报告书》（报批稿）等材料已收悉。根据《中华人民共和国水土保持法》第二十五条、二十七条、三十二条、四十一条和《浙江省水土保持条例》第十九条、二十条之规定，现批复如下:

一、工程位于乐清市乐成镇城东街道胜利塘北片围区造地区块。建设内容包括光伏组件场、道路工程、集电线路和施工场地。工程占地总面积259.6476hm²，其中永久占地1.0009hm²，临时占地258.6467hm²。工程建设总工期14个月，2015年10月开工，2016

1

年11月完工。工程总投资15亿元，其中土建投资为1.35亿元。

项目涉及土石方开挖、填筑，扰动原地表面积259.6476hm^2，建设期间如不采取有效的防治措施，将造成水土流失量 2137t。本工程已完工，建设过程中采取了有效的防治措施，水土流失量得到有效控制。但是编制水土保持方案，进一步做好工程后续水土流失防治工作，对保护项目区生态环境是十分必要的。

二、基本同意水土保持分析与评价

（一）主体工程选址、施工时序、施工布置、施工工艺、方法等基本符合水土保持要求。主体设计中具有水土保持功能工程的评价和界定基本合理。

（二）工程土石方开挖总量6.74万m^3（均为一般土石方）。

（三）工程土石方填筑总量9.51万m^3（均为一般土石方）。

（四）工程土石方借方总量2.77万m^3（均为一般土石方），从合法料场商购。

（五）工程土石方无余方。

三、同意水土流失防治责任范围的界定，面积总计259.6476hm^2，水土流失防治责任者为乐清正泰光伏发电有限公司。

四、基本同意水土流失预测的时段划分、内容、方法及预测结果。

五、同意工程水土流失防治标准执行南方红壤区二级标准。至设计水平年2021年，水土流失治理度达到95%，土壤流失控制比达到1.70，渣土防护率达到95%，林草植被恢复率达到95%，林草覆盖率达到22%，项目区无表土资源，故不涉及表土保护率。

六、同意水土流失防治分区划分为四个区：Ⅰ区为光伏组件

场防治区，II区为升压站防治区，III区为集电线路及道路工程防治区，IV区为施工临时设施防治区。

七、基本同意工程水土保持方案提出的水土流失防治措施体系、水土保持措施总体布局、施工组织设计及进度安排。水土流失防治措施体系如下：

I区：

工程措施：复耕✓；

临时措施：塑料彩条布苫盖✓；

II区：

工程措施：雨水管网✓、绿化覆土✓；

植物措施：综合绿化✓；

临时措施：塑料彩条布苫盖✓、临时排水沟✓、沉沙池；

III区：

植物措施：撒播草籽✓；

临时措施：塑料彩条布苫盖✓；

IV区：

工程措施：复耕✓

临时措施：临时排水沟✓、沉沙池✓。

（以上带✓表示主体工程已设计，其余为水土保持方案新增措施。）

八、基本同意水土监测时段、内容和方法。

九、同意工程水土保持估算总投资1546.97万元，新增水保投资222.09万元，新增投资应纳入工程总投资并确保到位。根据财综〔2014〕8号、浙价费〔2014〕224号及浙政办发〔2015〕107号文件，“对一般性生产建设项目，按照征占用土地面积一次

性计征，收费标准为每平方米1元（不足1平方米的按1平方米计）”，“2015年10月1日起，涉企行政事业性收费水土保持补偿费按规定标准的80%征收”。本项目征占用土地面积2596476m²，故水土保持补偿费计征面积为2596476m²，需缴纳水土保持补偿费2077180.8元。请乐清正泰光伏发电有限公司收到批复后即时到温州市税务局第一分局足额缴纳水土保持补偿费。

联系人：余正普，联系电话：0577-88523209、18257724900。

十、工程水土保持方案的实施由乐清市水利局按照属地原则负责监督检查，我局负责监管。你单位应依法自主组织水土保持设施验收工作，水土保持设施验收合格后向社会公开，并向我局报备。

温州市水利局水保工作热线：0577-57579793。

十一、本工程涉及其它管理事项的，请报有关部门批准。

十二、请方案编制单位浙江建投环保工程有限公司在批复后将本水保方案上传至全国水土保持信息管理上报系统。

十三、你单位如对本批复决定不服的，可自接到本决定书之日起60日内向温州市人民政府申请行政复议；或者在六个月内向鹿城区人民法院提起行政诉讼。

温州市水利局

2021年7月20日

抄送：市发展和改革委员会、市综合行政执法局、市税务局第一分局，市水政监察支队，乐清市水利局、乐清市综合行政执法局。

温州市水利局办公室 2021年7月20日印发

4

Addendum 11

中华人民共和国

税收电子缴款书

No.33303621090027915 7

登记注册类型：私营有限责任公司 填发日期：2021年09月16日 税务机关：国家税务总局温州市税务局第一税务分局

纳税人识别号	91330382090982668K		纳税人名称	乐清正泰光伏发电有限公司			
地 址	乐清市柳市镇上园工业区正泰大楼三楼						
税 种	品目名称	课税数量	计税金额或销售收入	税率或单位税额	税款所属时期	已缴或扣除额	实缴金额
水土保持补偿费收入	水土保持补偿费收入		2077180.80	1.	2021-09-16至2021-09-16	0.00	2077180.80
合计	（大写）贰佰零柒万柒仟壹佰捌拾元捌角整						¥2077180.80
税务机关（盖章）	代征单位（盖章）		填票人 网上申报		备注		

国家税务总局温州市税务局第一税务分局 电子业务专用章

妥善保管

Addendum 12

Figure 1 Photovoltaic power generation area

Figure 2 Photovoltaic power generation area

Figure 3 Photovoltaic power generation area

Figure 4 Recultivation of land under photovoltaic panels

Figure 5 Recultivation of land under photovoltaic panels

Figure 6 Drainage ditches on both sides of the road

Figure 7 Drainage ditches on both sides of the road

Figure 8 Booster station

Figure 9 Greening in the booster station

Figure 10 Greening in the booster station

8.2 Attached Figures

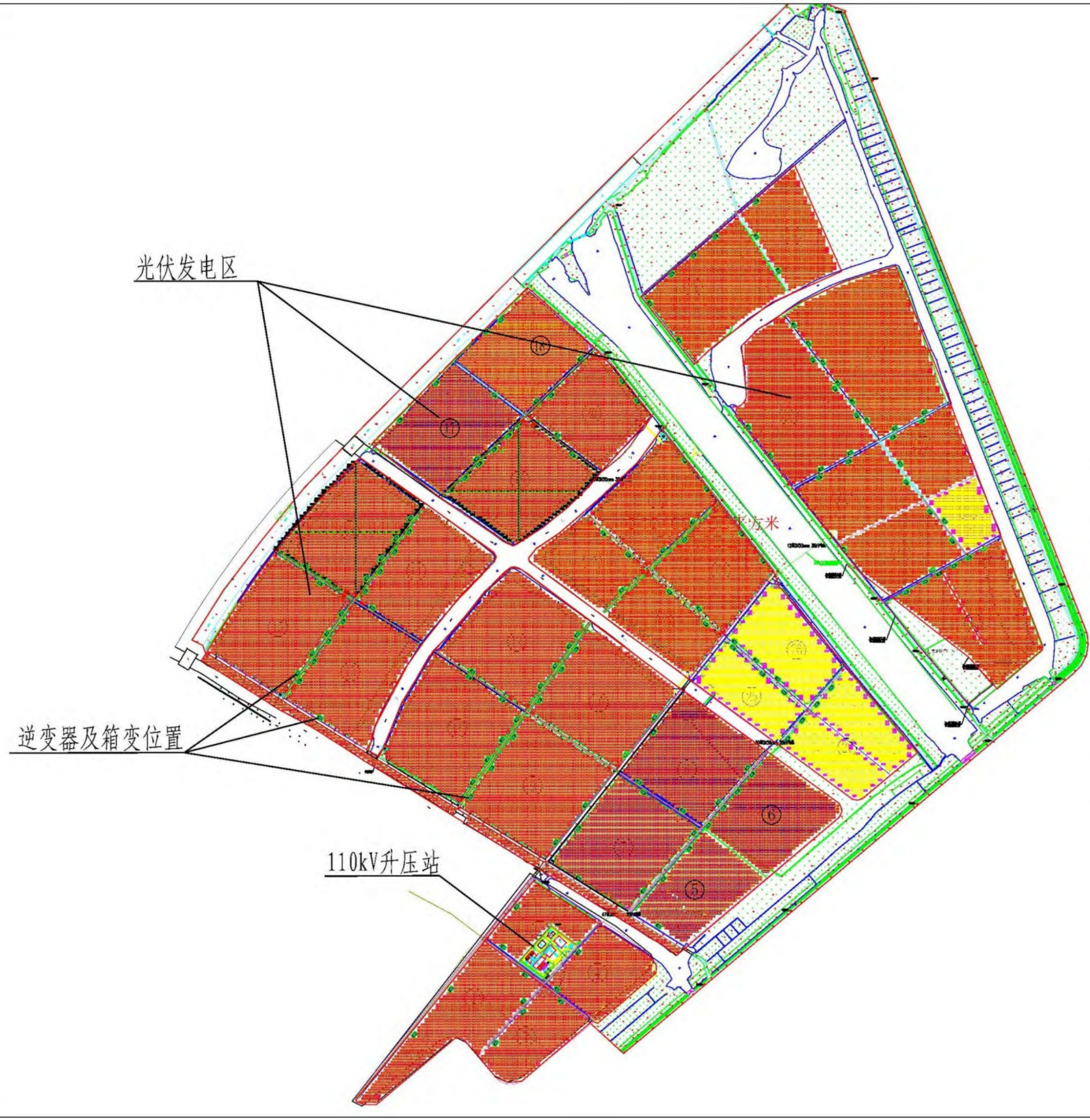
1. Geographical location map of the project

2. Project general layout plan

3. Project soil and water loss prevention and control responsibility scope and soil and water conservation facilities completion acceptance map

4. Google imagery before and after the project construction

附图1 项目地理位置图



工程特性表

一、项目基本情况			
项目名称	乐清正泰 150 兆瓦农光互补光伏发电项目		
建设地点	乐清市乐成镇城东街道胜利塘北片国区造地区块		
建设单位	乐清正泰光伏发电有限公司		
建设规模	总装机容量为 150MWp，共计布置 48.6 万块 310Wp 多晶硅光伏组件，新建 1 座 110kV 升压站及配套设施		
工程性质	新建建设类项目		
工程总投资	总投资 15 亿元（土建投资 1.35 亿元）		
工程建设期	2015 年 10 月~2016 年 11 月，总工期 14 个月		
二、项目组成及占地情况（单位：hm^2）			
项目	合计	租赁用地（临时占地）	指标特性
光伏场地 光伏组件及支架基础	251.0067	251.0067	共计布置 48.6 万块 310Wp 多晶硅光伏组件；光伏支架基础采用混凝土预制管桩
光伏场地 逆变及箱变	0.81	0.81	共布置 148 台 1000kVA 箱变，296 台 500kW 集中式逆变器
光伏场地 小计	251.8167	251.8167	
110kV 升压站	1.0009	1.0009	一幢 2F 的生产辅助楼、主变、SVG、消防砂箱、生化处理池、事故油池，一幢 2F 的生活楼及室外 GIS 等
道路工程	1.43	1.43	进站道路原状为泥结砾石路面，工程施工过程中改造为沥青混凝土结构，长 2.044km，宽度为 6m。光伏场内检修道路完全利用现有泥结砾石道路。
集电线路	5.40	5.40	35kV 电缆用量约为 36km
施工场地	（0.80）	（0.80）	
合计	259.6476	259.6476	

附图2 工程总平面布置图

附图3 项目水土流失防治责任范围及水土保持设施竣工验收图

N

施工前项目区遥感影像图

施工后项目区遥感影像图

附图4 项目建设前、后谷歌影像图