

Wenzhou Letai 150MW agricultural photovoltaic power generation project

Acceptance report of soil and water conservation facilities



Construction unit: Wenzhou Letai Photovoltaic Power Generation Co., Ltd.

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

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温州乐泰 150MW农光互补光伏发电项目 水土保持设施验收报告

建设单位：温州乐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

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Responsibility Page

Zhejiang Jiantou Environmental Engineering Co., Ltd.

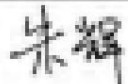
Division of responsibilities	Responsible Person	Position or title	sign
approve:	Yu Lisheng	Chairman	
nuclear Certainly:	Zhu Song	Deputy General Manager	
Review check:	Fang Pei Zhen	Chief Engineer	
school nuclear:	Jiang Shan	Senior Engineer	
Project Leader:	Jiang Shan	Senior Engineer	
Written by: Zhan 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)		

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Preface

The Wenzhou Letai 150MW agricultural photovoltaic power generation project is a project of Wenzhou Letai Photovoltaic Power Generation Co., Ltd. in Wenzhou City.

The project is a construction project for the production supporting area of the first phase of Fei. It covers an area of about 205.089hm² and consists of 150

MW solar photovoltaic power station, 110kV photovoltaic booster substation, and modern agricultural crop planting.

Using monocrystalline silicon modules, a total of 414,720 photovoltaic modules were arranged; the grid-connected inverter used a 1500V system centralized inverter.

The rated power is 2500kW, with a total of 48 sets. A new 110kV booster station is built, covering an area of 0.60hm², consisting of a central control

The light intensity under photovoltaic panels is different, and agricultural air

Different vegetable crop varieties can be selected during the period. The construction of photovoltaic power stations can optimize the power supply structure, protect the environment, and promote energy

and sustainable development of economy and environment.

In April 2019, the construction unit signed a state-owned agricultural land use rights agreement with Wenzhou Oufei Economic Development Investment Co., Ltd.

In April 2019, the project registration "Zhejiang Enterprise Investment Project Registration (Coding) Information Form" was completed.

Project code: 2019-330300-44-03-023254-000).

This project was completed by April 2021. During the construction period, no third-party technical service unit was commissioned to carry out water

Soil conservation plan preparation work. According to the Technical Standards for Soil and Water Conservation in Production and Construction Projects (GB 50433-2018) and

"Measures for the Management of Soil and Water Conservation for Production and Construction Projects in Zhejiang Province" (Zhejiang Water Conservation [2019] No. 3), this project needs to apply for water conservation

In June 2021, the construction unit commissioned Zhejiang Hongcheng Water Conservancy Engineering Technology Co., Ltd. to undertake the "Wenzhou Le

The preparation of the Soil and Water Conservation Plan Report for the 150MW Agricultural Photovoltaic Power Generation Project in Thailand was completed in July 2021.

Completed the "Soil and Water Conservation Plan Report for Wenzhou Letai 150MW Agricultural Photovoltaic Complementary Power Generation Project" (draft for review).

In July 2011, according to the Wenzhou Water Conservancy Bureau's "Service Forwarding Consultation Feedback Form", the draft was revised and submitted to the Wenzhou

"Report on Soil and Water Conservation Plan for Loctite 150MW Agri-Photovoltaic Complementary Power Generation Project" (Draft for Approval).

On October 9, 2021, the Wenzhou Water Conservancy Bureau approved the soil and water conservation plan with the document "Wenshui Xu [2021] No. 36".

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 plan. Since the start of construction in November 2019, 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 14.57%, 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 May 2022.

The "Acceptance Report on Soil and Water Conservation Facilities for Wenzhou Letai 150MW Agricultural Photovoltaic 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 production supporting area of the first phase of Oufei, Wenzhou City, Zhejiang Province. The site coordinates are approximately 27°53y56 north latitude and east

Longitude 120°53y22.

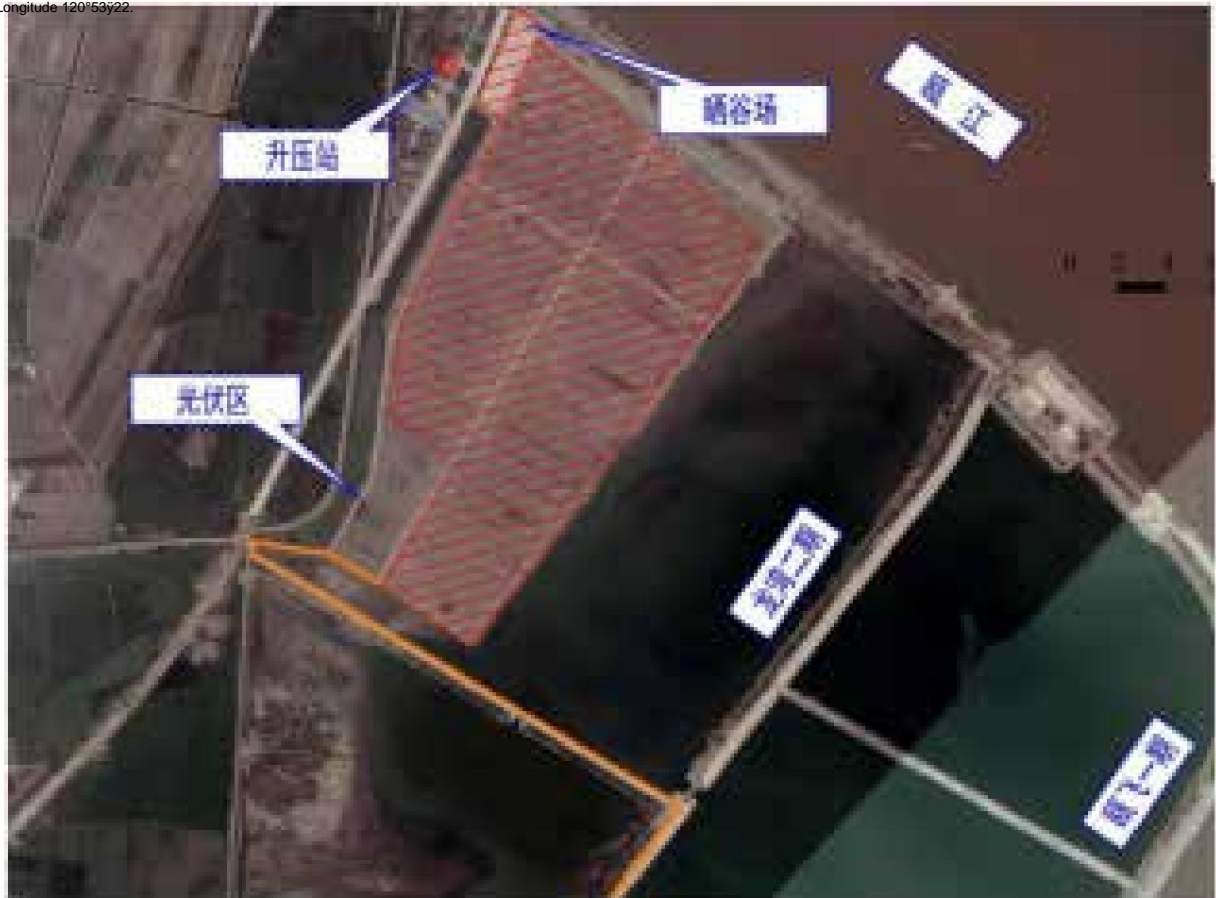


Figure 1-1 Geographical location of the project

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, modern agricultural crop planting.

1) Photovoltaic system: This agricultural-photovoltaic complementary photovoltaic power generation project adopts the scheme of block power generation, secondary voltage boosting and centralized grid connection.

This system uses a 1500V voltage system, and the photovoltaic components use high-power CHSM6612M/HV365W monocrystalline silicon components.

A total of 414,720 photovoltaic modules are arranged; the grid-connected inverter uses a 1500V system centralized inverter with a rated power of 2500kW, 48 sets in total.

2) Build a new 110kV booster station, 110kV adopts line transformer group connection method, 35kV adopts single busbar segment connection method

Mode.

3) Each photovoltaic power generation array includes a box-type step-up transformer and a photovoltaic power generation unit.

1.1.3 Project Investment

The actual total investment in the project is 1.05 billion yuan, of which 70 million yuan is for civil engineering, and the construction funds are raised by the construction unit itself.

1.1.4 Project composition and layout

The construction content of this acceptance includes photovoltaic component area, 110kV booster station and modern agricultural crop planting.

1.1.4.1 Photovoltaic Module Area

This system uses a 1500V voltage system, and the photovoltaic components use high-power CHSM6612M/HV365W monocrystalline silicon components.

This project divides the 150MWp photovoltaic array into 48 3.1536MWp photovoltaic arrays.

Each PV sub-array contains two 1250kW grid-connected inverters, about 18 DC combiner boxes and one

2500kVA step-up transformer.

The cables between the PV panels and the combiner box are laid through pipes. The combiner box is connected to the inverter in the inverter container.

The cable is laid by direct burial. The cable trench is mainly constructed by excavators, supplemented by manual excavation.

Fill as you lay.

The photovoltaic module field area consists of photovoltaic power generation arrays and the open space between the arrays. Each photovoltaic power generation array includes 1 box

Considering the characteristics of "agricultural photovoltaic complementarity" and the topographic and geological conditions of the site, the photovoltaic

The support foundation adopts a structural type of PC pipe piles that serve as both columns and foundations, and the corresponding support type is a single-column type.

The solar photovoltaic panel components of this project are fixed with a steel structure support system according to the required angle of the solar panels.

Use hot-dip galvanized square steel pipes or round steel pipes or C-shaped steel to make regular triangular racks, and use hot-dip galvanized square steel pipes between the racks.

Or C-shaped steel to form a reliable and stable structural system.

1.1.4.2 110kV booster station

The east side of the booster station site is the Yongtaiwen Expressway double track, and the south, west and north sides are all open space.

Two 80MVA 110kV step-up transformers are connected to the system via a 110kV line.

The booster station is located in the northwest corner of the photovoltaic power station. The 110kV distribution device adopts outdoor GIS type. The booster station covers an area of 0.60hm²

(1) Buildings and structures within the station

The total construction area of the project is about 2230m², the total land area is about 6023.5m², and the land area is about 1522.50m² ;

It consists of a central control building, a living building, a fire pump room, a fire water tank and other equipment. The building structure adopts a concrete frame structure.

The foundation adopts natural foundation.

(2) Roads within the station

There is a main entrance and exit on the east side of the station area. The road inside the station is an urban concrete pavement with a width of 4m, which can be directly accessed by fire trucks.

The width of the access road to the project site is 6m. Considering the use of the original rural road to connect to the provincial road, the access road to the station

For concrete pavement.

(3) Station area drainage

The drainage system adopts a domestic sewage and rainwater diversion system. The sewage is mainly domestic sewage, and the sewage volume is 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.

(4) 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 18% and the area is about 0.11hm².

1.1.4.3 Modern agricultural crop planting

Without changing the nature of agricultural land, a "win-win" situation is achieved with clean power generation on the framework and efficient planting under the framework.

The warm soil environment of the base can greatly improve the "thermal resistance effect" of photovoltaic modules, while providing the necessary shade for crops.

Sunny conditions, to achieve "agricultural and photovoltaic complementarity".

The main task of this project is to renovate the grid fields, level the site, and remove construction waste and weeds.

Then divide the existing single plots of about 100 mu into relatively independent plots of about 20 mu in the north-south direction.

A 1.5m wide mud ditch with a length of 94.7km was set between the fields. The land was leveled by combining deep plowing and soil improvement.

During the tillage process, stones mixed in the tillage layer need to be picked out manually.

According to the different light intensity under the photovoltaic panels, different vegetable crop varieties can be selected in the agricultural space, such as loofah,

Spinach, onion, cabbage, etc.

1.1.5 Construction organization and construction

period

The total construction period of the project is 17 months. It started in November 2019 and was completed at the end of April 2021.

The construction, production and living area is located within the red line of the threshing ground, with an area of about 0.950hm²; it is used to connect the booster station and the photovoltaic group.

A construction access road with a length of 255m and a width of 6m is set up at the site, covering an area of approximately 0.153hm².

1.1.6 Earthwork

1) Earthwork balance of approved scheme engineering

The total excavation volume of the project is 158,200 m³, all of which is earthwork; the filling volume is 169,100 m³, including 0.03 m³ of topsoil and 0.1 m³ of earthwork.

162,300 m³ of soil, 6,500 m³ of stone; 158,200 m³ of excavation and 10,900 m³ of borrowing, including topsoil

0.03 thousand m³, 0.41 thousand m³ of earthwork, 0.65 thousand m³ of stonework, purchased from legal material yards; no abandoned material.

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

The actual excavation volume of the project was 158,200 m³, all of which was earthwork; the filling volume was 169,100 m³, of which 0.03

10,000 m³, earthwork 162,300 m³, stonework 6,500 m³; excavation self-utilization 158,200 m³, debit 10,900 m³,

Of which, topsoil is 0.03 thousand m³, earthwork is 0.41 thousand m³, and stonework is 0.65 thousand m³. The earthwork volume is shown in Table 3. The earthwork volume was purchased from a legal material yard; there was no abandoned earthwork. 1-4.

3) Reasons for changes in actual earthwork volume

The project was completed in April 2021. In June 2021, the construction unit commissioned Zhejiang Hongcheng Water Conservancy Engineering Technology Co., Ltd.

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

The amount of earthwork that occurred.

Table 1-2

Earthwork balance sheet of approved plan

Unit: 10,000 m³

Serial number project	Cut	Backfill			Call-in		Call Out			debit				Other	
		Earthwork	surface earthwork,	stonework	Subtotal	Earthwork Source	Earthwork	Destination Topsoil	Earthwork	Stonework	Subtotal	Source			
1	cable trench engineering, 0.24,		0.1	0.09	0.19			0.14	3			0.09	0.09		
2	inverter foundation engineering, 0.45		0.12	0.18	0.3			0.33	6			0.18	0.18	0.18 Under the bridge in Yongjia County	
3	Booster station level	0.07		0.57	0.57	0.14	1				0.36		0.36	Town Village pit	
4	Greening soil cover		0.03		0.03					0.03			0.03	bottom Long building	
5	Farmland drainage ditch	15.06		15.06	15.06									stone 0 (tuff)	
6	Construction access road			0.38	0.38	0.76	0.33	2			0.05	0.38	0.43		
Subtotal		15.82	0.03	16.23	0.65	16.91	0.47		0.47		0.03	0.41	0.65	1.09	0

Table 1-3

Actual earthwork balance sheet

Unit: 10,000 m³

Serial number project	Earthwork	Backfill topsoil and stonework				Source and destination of earthwork				Debit				Other		
		Backfill	topsoil	and stonework	Subtotal	transferred in and out				surface earthwork and stonework	subtotal	source				
1	Cable trench engineering	0.24		0.1	0.09	0.19			0.14	3			0.09	0.09		
2	Box inverter basic engineering 0.45			0.12	0.18	0.3			0.33	6			0.18	0.18		
3	Booster station level	0.07		0.57		0.57	0.14	1				0.36		0.36	Legal material yard	
4	Greening and			0.03		0.03					0.03			0.03	purchase	
5	covering farmland drainage ditch	15.06		15.06		15.06								0		
6	Construction access road			0.38	0.38	0.76	0.33	2			0.05	0.38	0.43			
Subtotal		15.82	0.03	16.23	0.65	16.91	0.47		0.47		0.03	0.41	0.65	1.09		0

Table 1-4

Comparison table of earthwork volume approved in the plan and actual earthwork volume

Unit: 10,000 m³

Serial 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	Subtotal	Subtotal increase/decrease				
1	Cable trench engineering	0.24	0.24	0	0.19	0.19	0	0.09	0.09	0	0	0	0
2	Box inverter foundation engineering	0.45	0.45	0	0.3	0.3	0	0.18	0.18	0	0	0	0
3	booster station leveling	0.07	0.07	0	0.57	0.57	0	0.36	0.36	0	0	0	0
4	Greening soil cover	0	0	0	0.03	0.03	0	0.03	0.03	0	0	0	0
5	Farmland drainage ditch	15.06	15.06	0	15.06	15.06	0	0	0	0	0	0	0
6	Construction access road	0	0	0	0.76	0.76	0	0.43	0.43	0	0	0	0
total		15.82	15.82	0	16.91	16.91	0	1.09	1.09	0	0	0	0

1.1.7 Land Acquisition

The actual total area of the project is 205.089hm², of which the permanent area is 204.936hm², including the photovoltaic panel field,

The land occupied by the roads, drying fields and supporting facilities of the booster station; the temporary land area is 0.153hm², including the construction access road

0.153hm², temporary production and living area for construction 0.95hm² (located in the threshing ground, the area is not calculated repeatedly).

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

Total Project Area		Unit: hm ²
Land type	Project composition	Land area
Permanent land occupation	Photovoltaic panel field	183.678
	Sunning field	5.044
	On-site road	15.612
	booster station	0.602
	Subtotal	204.936
Temporary land occupation	Construction access road in	0.95
	production and living area	0.153
	Subtotal	0.153
total		205.089

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

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

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 conditions

1) Topography and landforms

Longwan District, Wenzhou City is located on the south bank of the Oujiang River estuary, bordering the East China Sea to the east. It was originally across the sea from Dongtou County.

The levee is connected to Dongtou County; to Ruian City in the south; to Ouhai and Lucheng Districts in the west; to Oujiang River in the north, and to Yueqing City and Yongjia

The eastern part of the county is a low-lying coastal plain with a dense network of rivers, while the western part is characterized by exposed rock mass.

The Dalou Mountain is located in the west of the Wenrui Plain. The plain is long from north to south and narrow from east to west. The Yongqiangtang River runs through the west of the plain.

North and South.

This project is located in the production supporting area of the first phase of Oufei, Wenzhou City, Zhejiang Province. The original landform unit of the site is a tidal flat.

The terrain is flat. Due to the influence of artificial transformation, the site has been reinforced by filling. The current ground elevation is

2.40m~4.90m, the entire plot is high in the northwest and low in the southeast, with a large relative height difference.

(1) Regional geological structure The engineering area belongs to the Cathaysia fold system in terms of geological structure and is greatly affected by two groups of faults, the NNE and NNW.

It is more prominent in modern basic geomorphic units. Since the Quaternary period, the tectonic movement in the survey area has been mainly overall uplift.

The foundation soil layer is 30m, and the shallow soil layer is composed of soft soil layers such as silt, silt mixed with sand, and silt, which belongs to the soft site conditions. The site category

is Class III. The sandy soil in the foundation soil layer is mainly distributed in the soft soil in the shape of a lens and is only distributed in some parts of the north embankment.

The distribution range is relatively small, the thickness is only 1.5 to 2.0 m, and it is relatively loose. When the basic earthquake intensity value in this area is VI,

There is no earthquake liquefaction problem.

(2) Structure and characteristics of the site rock and soil layers

The strata within the exploration depth range of the project site can be divided into three major layers, which are further divided into five sub-layers, which are described from top to bottom as follows:

The strata within the exploration depth of the site are mainly composed of blown fill soil. The composition and properties of the foundation soil layers are described from top to bottom as follows:

Down:

① Muddy clay: gray, plastic, $q_c=890\sim 1235\text{kPa}$, $f_s=19\sim 22\text{kPa}$, more affected by hydraulic filling reinforcement

② Muddy clay: gray, plastic, $q_c=590\sim 850\text{kPa}$, $f_s=10\sim 15\text{kPa}$, less affected by blown fill reinforcement,

Poor mechanical properties. ③

Silty clay: gray, plastic, $q_c=830\sim 1050\text{kPa}$, $f_s=15\sim 18\text{kPa}$, and acceptable mechanical properties.

The planning area belongs to the Oujiang alluvial and sea-flooding plain, with flat terrain and crisscrossing rivers. The project area and its surrounding areas are low mountains and hills.

The exposed mountains and islands are mainly the eastern remnants of the Yandang Mountains.

According to the data and relevant documents issued by the National Construction Commission, the earthquake intensity in this planning area is 6 degrees, and no major earthquake has occurred in history.

shock.

(3) Hydrogeological conditions

Groundwater has different recharge, drainage, and hydrochemical properties due to different water-bearing media, hydrodynamic characteristics, and storage conditions.

The characteristics are different. According to drilling revelations, the main groundwater type within the exploration depth range is pore water.

The groundwater above this site is mainly of the phreatic type, stored in the upper soil layer, with shallow phreatic burial depth.

The water level is mainly affected by atmospheric precipitation and surface runoff, and the annual fluctuation of groundwater level is about 1.00 to 2.00 m.

2) Weather

Wenzhou is located in the subtropical humid monsoon climate zone. Influenced by the monsoon climate, it has four distinct seasons and a pleasant climate.

Moderate, with short periods of severe cold and hot summer. The air is humid and the rainfall is abundant. The monsoon characteristics are obvious, with southerly winds prevailing in the summer half of the year, and humid

It is moist and rainy. In winter, the northerly wind prevails, the climate is dry, and there is little rainfall. There is sufficient sunlight, abundant heat, and a long frost-free period.

It is one of the areas with the richest water and heat resources in the province. The average temperature over the years is 17.3°C, and the extreme maximum temperature is 35.7°C.

The lowest temperature is -4.1°C. The average annual rainfall is 1228mm, with large inter-annual differences, the highest being 1752.9mm (1962

The minimum is 647.7 mm (1971). The rainfall is bimodal in the year, with the plum rain season from April to June accounting for 2.3% of the total rainfall.

38% of the annual rainfall. August to September is the typhoon rain season, with rainfall accounting for about 22% of the annual rainfall.

The annual average evaporation is 1538.3 mm (E20).

The frost period is 329 days, the sunshine hours are 1932.4 hours, and the relative humidity is 80%. The average wind speed is 6.9m/s, and the dominant wind

direction is EN. 3) The

hydrological typhoon season is the main period for flood disasters in this area.

The eastern part of Wenzhou City is densely covered with rivers. The water system belongs to the Wenrui River system. The main river, Yongqiang River, has a watershed area of 1.37 m.

142.8km², the main stream is 16km long, the total length of the river network is 386.066km, and the corresponding water surface area at normal water level (elevation 2.5m)

6.977km², with a water storage capacity of approximately 9.35971 million m³. The existing river channels in Yongqiang area within the planning scope can be summarized as "six vertical and eight horizontal"

Inland flood drainage system: Six longitudinal rivers: (1) Yaoxi River, Caohe River - Dongping Sluice Gate; (2) Longshui River; (3) Shuangqiao River; (4) Yongqiang River -

Lantian New Sluice Gate; (5) Zhongheng River; (6) Renmin River - Binhaitang River - Chengdong Sluice Gate;

Eight horizontal rivers: (1) Bailouxia River; (2) Huangshishanhou River - Nan'an River; (3) Shuixin River; (4) Qingshanzhi River; (5)

Chengzhong River; (6) Sanjia River; (7) Dongmenpu - Dongmen Water Gate; (8) Changqiao - Changqiao Water Gate.

There is no obvious river network in the site, mostly ditches in the fields; there is an inner river in the west of the project area, about

20m, length about 2.2km, width about 60-100m.

According to the "Zhejiang Province Water Function and Water Environment Functional Zone Division Plan" (Zhejiang Provincial Water Resources Department and Zhejiang Provincial Environmental Protection Department,

As of June 2015, this project does not involve drinking water source protection areas, and no water function and water environment function zones have been delineated.

4) Soil

The soil distribution in Longwan District from east to west is saline soil - saline tidal soil - desalinated soil - paddy soil - low mountain red soil.

The vertical distribution of loam from plains to mountains is mud soil, paddy soil, and red soil. Among them, paddy soil is the most common soil in plains.

The coastal plains are mainly meadow soils, and the coastal soils are mainly saline soils and desalinated soils.

The main soils are red soil, coarse bone soil, fluvo-aquic soil and paddy soil. Red soil and coarse bone soil are distributed in mountainous and hilly areas.

Paddy soil is mainly distributed in paddy fields and river valleys in low mountain and hilly areas, and in plain agricultural areas. Fluvo-aquic soil is mainly distributed in the lower reaches of rivers and

The swimming impact zone and high tide section.

After on-site investigation, this project is located in the sea reclamation area, and the soil is mainly filled soil.

Strippable topsoil.

5) Vegetation

The vegetation in the project area belongs to the southern sub-zone of the mid-subtropical evergreen broad-leaved forest, and the main vegetation is coniferous forest, evergreen broad-leaved forest and coniferous forest.

Due to the influence of people's production activities and natural disasters, most of the

The natural vegetation has been replaced by secondary and artificial vegetation. According to incomplete surveys, there are 439 species of plants in 131 families in this area.

The main tree and shrub species include Masson pine, Huangshan pine, Cryptomeria fortunei, Cunninghamia lanceolata, Camphor tree, Liquidambar formosana, as well as Fagaceae, Magnoliaceae,

Theaceae, Lauraceae, Anacardiaceae, Aquifoliaceae, Oleaceae, Rosaceae, Taxaceae, Ginkgoaceae, Euphorbiaceae, etc.

The main bamboo resources include moso bamboo, Wenzhou water bamboo, green bamboo, single bamboo, green bamboo, arrow bamboo, golden bamboo, and indigo bamboo.

Economic crops include bayberry, citrus, tea, etc.

After on-site investigation, it was found that this project is located in the sea reclamation area and the vegetation is mainly reeds.

1.2.2 Soil and water loss and prevention and control The

main type of soil and water loss in Longwan District, Wenzhou City is hydraulic erosion.

40.08km² (mild erosion 7.94km², moderate erosion 18.46km², severe erosion 7.39km², extremely severe erosion 4.53km²,

Severe erosion (1.76km²) accounts for 10.52% of the total land area of the city. According to investigation and analysis, the main type of soil and water loss in the project area is 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 Longwan District, Wenzhou City are shown in

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

Unit: km²

Administrative area	No obvious erosion area	The soil erosion is					Subtotal	Ratio	Total land area
		Mild	Moderate	Strong	serious and severe				
Longwan District	341	7.94		7.39	4.53		40.08	10.52%	381.08
		18.46			1.76				

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 July 2018, China Energy Engineering Group Zhejiang Electric Power Design Institute Co., Ltd. completed the Wenzhou Locite

"Feasibility Study Report on 150MW Agricultural Photovoltaic Complementary Power Generation Project".

(2) In October 2015, the project was registered with the Zhejiang Enterprise Investment Project Registration (Coding) Information Form (Project

Project code: 2019-330300-44-03-023254-000).

(3) In November 2019, China Energy Engineering Group Zhejiang Electric Power Design Institute Co., Ltd. completed the Wenzhou Locite

"Construction drawings of 150MW 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 June 2021, the construction unit Wenzhou Letai Photovoltaic Power Generation Co., Ltd. commissioned Zhejiang Hongcheng Water Conservancy Engineering Technology

Co., Ltd. is responsible for the preparation of soil and water conservation plan for this project.

(2) After accepting the commission, the project preparation unit completed the "Wenzhou Letai 150MW Agricultural Photovoltaic Complementary Project" in July 2021.

Soil and Water Conservation Plan Report for Power Generation Project (Draft for Review).

(3) In July 2021, the Wenzhou Water Conservancy Bureau organized the "Wenzhou Letai 150MW Agricultural Photovoltaic Complementary Power Generation Project Water Conservancy Project"

The Soil and Water Conservation Plan Report (Draft for Review)" is reviewed by letter and a review opinion is formed. The plan preparation unit shall

The plan was modified and improved according to relevant regulations and review opinions and submitted to the Wenzhou Letai 150MW Agricultural Photovoltaic Power Generation Project

Soil and Water Conservation Plan Report" (Draft for Approval).

(4) On October 9, 2021, the Wenzhou Water Conservancy Bureau issued Document No. Wenshuixu [2021] 36 to

150MW

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 November 2019 and was completed in April 2021. 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 will be 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 soil and water 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 205.089hm², of which permanent land

product

204.936hm², temporary land area 0.153hm².

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

205.089hm²·

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

Table 3-1 Scope Table of the scope of responsibility for water and soil loss prevention and control projects that actually occurred Unit: hm²

of responsibility for water and soil loss prevention and control	Land occupation type	Project composition	area	
Project construction area	Permanent land occupation	Photovoltaic panel field	183.678	
		Sunning field	5.044	
		On-site roads	15.612	
		Booster station	0.602	
		Subtotal	204.936	
	Temporary land occupation	construction, production and living area	·0.95·	
		Construction access road	0.153	
		Subtotal	0.153	
	total			205.089

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

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 and Comparison table of the area of responsibility for soil and water loss prevention and control projects Unit: hm²

Water Loss Prevention and Control Limitation of liability	Land occupation	The actual increase or decrease in the approved scope of the project composition (+/-) Reason			
Project construction area	Permanent land occupation	Photovoltaic panel field	183.678	183.678	0
		Sunning field	5.044	5.044	0
		On-site roads	15.612	15.612	0
		Booster station	0.602	0.602	0
		Subtotal	204.936	204.936	0
	Temporary land occupation	of construction access roads in	-0.95	-0.95	0
		production and living areas	0.153	0.153	0
		Subtotal	0.153	0.153	0
	total		205.089	205.089	0

3.1.3 Acceptance scope

The acceptance area is 205.089hm², of which 204.936hm² is permanent and 204.936hm² is temporary.

0.153hm². 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 205.089hm², 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 do a good job in 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 April 2021. In June 2021, the construction unit commissioned Zhejiang Hongcheng Water Conservancy Engineering Technology Co., Ltd.

In October 2021, the Wenzhou Water Conservancy Bureau issued a supplementary report on the soil and water conservation plan for this project.

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.

Soil conservation measures.

The soil and water conservation measures actually implemented in the project are designed as follows:

Table 3-3 The actual implementation of soil and water conservation measures in the project

Prevention and control zones	area	Soil and water loss	
		prevention and control measures	system measures type main body has been
implemented engineering measures site leveling and plowing; drainage ditch; Zone I - photovoltaic module prevention and control	including photovoltaic module plant measures / ...	farmland	
		responsibility area 204.334hm ² ,	
Prevention and control area	The area occupied by the living area and construction access road.		

3.5 Completion status of soil and water conservation facilities

During the actual construction process, the project area adopted site leveling and tillage, farmland drainage ditches, rainwater pipe network, greening and covering

Engineering measures such as soil, plant measures such as landscaping and nurturing management, and temporary measures such as temporary drainage of the site.

3.5.1 Zone I - Photovoltaic Module Field Prevention

Area

Engineering measures: site leveling and tillage of 183.68hm², farmland drainage ditch of 94.7km. 3.5.2

Zone II - Booster Station Prevention and Control

Zone

Engineering measures: 106m of rainwater pipe network, 325m³ of greening soil cover ;

Plant measures: Landscape greening 1084.2m², nurturing management 1084.2m². 3.5.3

Zone III - Temporary

facility prevention and control area

Engineering measures: site leveling 950m² ;

Temporary measures: 510m of temporary drainage ditch.

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

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 project quantities of soil and water conservation measures actually completed and approved by

Prevention and control zoning measures	Type Measure Name	Site leveling and tillage	the plan Unit	plan approved hm2	Actual completion	increase or decrease (+/-)
and control area Farmland drainage	Engineering measures ditch Rainwater pipe network	Zone I - PV panel field prevention		183.68	183.68	0
		Greening soil covering m	Comprehensive greening and	km	94.7	94.7
Zone II - Booster station prevention and control area	Engineering measures	tending management	m	106	106	0
		Site leveling Temporary drainage ditch	³	325	325	0
	Plant measures		m ²	1084.2	1084.2	0
			m ²	1084.2	1084.2	0
Zone III - Temporary facilities, engineering measures,				950	950	0
temporary measures for the treatment area			m ^{2m}	510	510	0

3.6 Completion of Soil and Water Conservation Investment

3.6.1 Actual completion of soil and water conservation

investment

The total investment in soil and water conservation in the project was 6.7401 million yuan, including 3.8931 million yuan in engineering measures and 761.2 million yuan in plant measures.

RMB 3,600, temporary measures RMB 80,000, independent expenses RMB 361,500, soil and water conservation compensation

The actual completed water and soil conservation investment in the compensation project is shown in the table, which is RMB 16.40712 million. 3-5y

Table 3-5 Serial Projects Actually Completed Project Soil and Water Conservation Investment Table Measure Name Unit: 10,000 yuan completed

number	Engineering Measures	investment
one	Plant Measures	389.31
two	Temporary Measures	76.12
345	Soil and Water	0.36
	Conservation Monitoring Fee	8
	Independent Fee	36.15
1	Construction Management	17.18
2	Fee Soil and Water Conservation Program Preparation and Survey and Design	5
3	Fee Soil and Water Conservation	13.97
Seven	Supervision Fee Soil and Water	164.07
or Eight	Conservation Compensation Fee Total Investment	674.01

(1) Investment in engineering measures

This project completed soil and water conservation engineering measures with an investment of 3.8931 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	Unit price per unit of engineering quantity (yuan)	Investment (ten thousand yuan)
one	Engineering Zone I - Photovoltaic Module Field Prevention Area		375.92
1	Site leveling and tillage	hm ² 183.68	1090.02 20.02
2	Farmland drainage ditch	km 94.7	37582 355.90
two	Zone II - Booster station prevention and control area		8.64
1	Rainwater pipe	m 106	750 7.95
2	network greening	m ³ 325	21.35 0.69
three	and covering area III-Temporary facility prevention area		4.75
1	Site leveling	m ² 950	50 4.75
Part I Engineering Measures			389.31

(2) Investment in plant measures

The project completed soil and water conservation plant measures with an investment of RMB 761,200.

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

Table 3-7 Serial Plant Measures Investment Table

number	Protection	Unit price per unit of engineering quantity (yuan)	Investment (ten thousand yuan)
one	Engineering Zone II - Booster Station Prevention Area		76.12
1	Comprehensive greening	m ² 1084.2	700 75.89
2	Nurturing and	m ² 1084.2	2.08 0.23
Management Part II Plant Measures			76.12

(3) Investment in temporary measures

The project has completed the temporary measures for soil and water conservation with an investment of RMB 3,600. The completion of the temporary measures investment is shown in Table 3-

8

Interim Measures Investment Table

Table 3-8 Serial number	Protection Engineering	Unit price of unit engineering quantity (yuan)	Investment (ten thousand yuan)
one	Zone III - Temporary construction facility prevention and control area		0.36
1	Construction of drainage ditch in production and living area	m 510	7.06 0.36
Part III. Interim Measures			0.36

(4) Soil and water conservation compensation

The project soil and water conservation compensation fee is RMB 1,640,712, which has been paid in full by the construction unit

Accept.

3.6.2 Reasons for changes in soil and water conservation project investment

Analysis

The project was completed in April 2021. In June 2021, the construction unit commissioned Zhejiang Hongcheng Water Conservancy Engineering Technology Co., Ltd.

In October 2021, the Wenzhou Water Conservancy Bureau issued a supplementary report on the soil and water conservation plan for this project.

36" was approved. Therefore, the soil and water conservation investment in the engineering, plants and temporary measures of the soil and water conservation plan approved by the project

The investment is the actual soil and water conservation investment in the project. In January 2022, the construction unit entrusted our unit to carry out the soil and water conservation work.

Monitoring and acceptance of soil and water conservation facilities are carried out according to the actual charges.

There are slight changes in the soil and water conservation plan, with an increase of 7,100 yuan.

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

Table 3-9 Serial Comparison table of total investment in soil and water conservation projects Unit: 10,000 yuan Increase or

number	Measure name	and design of schemes	decrease in completed investment (+/-)	
one	Engineering	389.31	389.31	0
two	measures Plant	76.12	76.12	0
	measures Temporary	0.36	0.36	0
	measures Soil and water conservation	6.29	8	1.71
345	monitoring fee	37.15	36.15	-1
1	Independent fee	18.18	17.18	-1
	Construction management fee 2 Soil and water conservation plan preparation and survey and	5	5	0
3	design fee Soil and water	13.97	13.97	0
Seven	conservation supervision fee Soil	164.07	164.07	0
or Eight	and water conservation compensation fee Total investment	673.30	674.01	0.71

4. Quality of soil and water conservation projects

4.1 Quality Management System

The project was constructed by Wenzhou Letai 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 Hongcheng Water Conservancy Engineering Technology Co., Ltd. is responsible for the engineering water

The soil conservation plan was prepared, Zhejiang Jiantou Environmental Protection Engineering Co., Ltd. was responsible for the soil and water conservation monitoring of the project, and Zhejiang Chint New Energy

Development Co., Ltd. is the general contractor, and Changzhou Zhengheng Electric Power Engineering Supervision Co., Ltd. is responsible for the project's soil and water conservation.

Measures for supervision.

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 Unit

categories Construction	Name Wenzhou	Work content and scope Engineering construction
unit Design unit Soil	Letai Photovoltaic Power Generation Co., Ltd. China Energy	Engineering design Soil
and water	Construction Group Zhejiang Electric Power Design Institute Co., Ltd. Zhejiang Hongcheng Water	and water conservation plan
conservation plan preparation unit Soil and water	Conservancy Engineering Technology Co., Ltd. Zhejiang Jiantou	preparation Soil and water conservation monitoring
conservation monitoring unit Main project	Environmental Protection Engineering Co., Ltd. Changzhou	Engineering supervision, soil and water
supervision unit Construction general	Zhengheng Electric Power Engineering Supervision Co., Ltd. Zhejiang	conservation supervision
contracting unit Operation unit	Chint New Energy Development Co., Ltd. Wenzhou Letai	
	Photovoltaic Power Generation Co., Ltd.	Operation and maintenance

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 takes effective measures in advance to assess the environmental status before the construction phase and the impact of soil erosion during construction.

The Supervision Office shall timely prepare soil and water conservation supervision plans and implementation rules. Regularly track and inspect the implementation of soil and water conservation measures.

The supervisor shall supervise the construction units to implement each soil and water conservation measure; during routine inspections, he shall find any soil and water conservation measures that are not conducive to water conservation.

Immediately urge the construction unit to solve the problem or signs of soil conservation and eliminate hidden dangers; regularly report soil and water conservation to the contractor

During the implementation of the project, water and soil resources are protected, earthwork is disposed of as required, and the

dust, protect vegetation, prevent the occurrence of soil and water loss accidents, and ensure that the soil and water conservation of the project meets 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 for the pressure station prevention and control area and the temporary construction facility prevention and control area.

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

Table 4-2 Soil and Water Conservation Project Classification Table

Agricultural cultivation	Division Engineering	Unit Engineering
and technical measures for unit projects	Recultivation	Divide each 20-50hm ² into a unit project
Flood control and drainage engineering	drain	Every 100m is considered as a unit project
Temporary protection works for	Spot vegetation	Each 1hm ² is regarded as a unit project
vegetation construction projects	drain	Every 100m is a unit project

4.2.2 Project quality assessment for each prevention and control area

Certainly

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 4-3.

Table 4-3 Results of quality assessment of implemented soil and water conservation facilities

Unit Engineering	Division Engineering	Appearance quality	Quality Assessment
Agricultural cultivation and technical measures for restoration of land		Good recultivation effect	Passed
The drainage of flood control and drainage engineering has beautiful appearance and qualified size			Passed
Vegetation construction project point patch vegetation		Vegetation is growing well	Passed
Temporary protection project	drain	Temporary drainage ditch with beautiful appearance and qualified size	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 project construction scope, according to the on-site verification results, the area of soil erosion is 205.089hm², and the soil erosion control has reached the standard

The area is 205.089hm², and the overall soil and water loss control rate is 99.9%, reaching the 98% 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 290t/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 97%.

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 0.11hm², the actual forest and grass vegetation restoration area is 0.11hm², and the forest and grass vegetation restoration rate is 99.99%, reaching the plan

98% of the control target has been determined.

5) Forest and grass coverage rate

Since the project is an agricultural photovoltaic complementary project, the photovoltaic area will be recultivated in the later stage, and the greening area is small.

The forest and grass coverage rate of the control area is not included in the calculation of forest and grass coverage rate, and only the control area of the booster station and the temporary facility area are included in the calculation of forest and grass coverage rate.

The project construction area is 0.755hm² (excluding the recultivated area). By the design level year, the forest and grass vegetation area is 0.11hm².

Plant measures will be implemented in all areas where plant measures can be taken. The forest and grass coverage rate in the project construction area is 14.57%, reaching 14%

6) Topsoil protection rate

After on-site investigation, this project is located in the area of sea reclamation, the vegetation is mainly reeds, some areas have no vegetation cover, and the soil

The soil is mainly filled soil with no stripped topsoil, 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

The construction unit shall appoint a dedicated person to be responsible for the soil and water conservation work of the project construction, and shall be responsible for the soil and water conservation work during the construction period.

Supervision and implementation of measures, construction and management of soil and water conservation projects, so that each stage of project construction meets the requirements of soil and water conservation and environmental protection.

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

The perfect water and soil conservation organization system ensures that the main projects and water and soil conservation plans are implemented.

Maintain the smooth implementation of measures and effectively supervise and manage so that various problems and emergencies reported during the construction process can be

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. Soil and water conservation measures should be taken according to the requirements during construction.

During the construction process, we will establish and improve various archives, accumulate, analyze and compile data,

Summarize experience and continuously improve soil and water conservation management. During the construction of soil and water conservation measures and after the completion of the project, accept

The water administration department shall supervise and inspect, and conduct completion acceptance of soil and water conservation facilities in accordance with relevant requirements.

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 November 2019 and will be completed at the end of April 2021. During the implementation of the main project, the construction unit

The bidding documents and construction contracts shall be used as the basis, and the construction shall be carried out in accordance with the technical specifications and contract requirements, and the contract shall be fulfilled conscientiously.

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

6.4 Soil and Water Conservation Monitoring

In January 2022, the construction unit entrusted our company to carry out soil and water conservation monitoring work. After accepting the entrustment, our company immediately

We investigated and surveyed the project site, prepared and submitted a monitoring implementation plan.

Carry out routine soil and water conservation on-site monitoring and submit monitoring results. The monitoring results mainly include one monitoring implementation plan.

In June 2022, the monitoring unit combined relevant engineering construction materials, analyzed and summarized a large amount of monitoring data, and compiled

Completed the "Summary Report on Soil and Water Conservation Monitoring of Wenzhou Letai 150MW Agricultural Photovoltaic Power Generation Project".

The construction period is monitored by the construction unit itself, and the site leveling and tillage, drainage measures, greening and covering, and greening projects taken are

Measures such as temporary protection works and other measures effectively prevented soil and water loss during the construction process.

The intensity of soil erosion in the project area has been greatly reduced. After the treatment, the weighted average value of soil erosion modulus in the project area has 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 16.40712 million yuan in full.

6.8 Management and maintenance of soil and water conservation facilities

The soil and water conservation work of the project includes not only the implementation of various soil and water conservation measures, but also the

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 Wenzhou Letai 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

14.57%. 7.2 Arrangements for remaining issues

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.

After the completion and acceptance of the soil and water conservation facilities, various soil and water conservation measures have been completed and are operating well.

The construction unit is responsible for the operation safety of the project and the normal operation of soil and water conservation facilities.

Care and maintenance.

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. Zhejiang Province Enterprise Investment Project Registration (Coding) Information Form
4. Letter on the review opinion of the "Feasibility Report of Wenzhou Letai 150MW Agricultural Photovoltaic Power Generation Project" (Wenzhou

Kaihai Nonghan [2018] No. 5)

5. Wenzhou Economic and Technological Development Zone Housing and Construction Bureau issued a notice on the Wenzhou Letai 150MW agricultural photovoltaic power generation project

Planning opinions on power project construction

6. Wenzhou Economic and Technological Development Zone Water Conservancy Bureau issued a report on the Wenzhou Letai 150MW agricultural photovoltaic power generation project

Construction advice

7. Wenzhou Municipal Bureau of Land and Resources Economic and Technological Development Zone Branch issued a report on Wenzhou Letai 150MW Agricultural Photovoltaic Complementary Photovoltaic

Review opinions on PV power generation projects

8. Review Opinion on the Environmental Impact Statement of the Wenzhou Letai 150MW Agricultural Photovoltaic Power Generation Project (Wenzhou

(Opening Approval No. 73 [2019])

9. Environmental Impact Report Form for the Supporting Booster Station Project of the Wenzhou Letai 150MW Agricultural Photovoltaic Power Generation Project

Review Opinion (Wenkaihan Approval Radiation [2021] No. 1)

10. Completion acceptance report of Wenzhou Letai 150MW agricultural photovoltaic power generation project

11. Approval of the Soil and Water Conservation Plan for the Wenzhou Letai 150MW Agri-Photovoltaic Power Generation Project (Wenshui Xu

(No. 36 [2021])

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

13. Acceptance site photos

Annex 1

Relevant events during the construction process

1. On May 31, 2018, the Ocean Fisheries and Agriculture and Forestry Bureau of Wenzhou Economic and Technological Development Zone organized a meeting of the Wenzhou Letai

The feasibility report of the 150MW agricultural photovoltaic power generation project was reviewed and approved by the Ministry of Agriculture and Rural Affairs with the title of "Wenkaihai Agricultural Letter [2018] No. 5".

Issuing a letter of review opinion on the "Feasibility Report of Wenzhou Letai 150MW Agricultural Photovoltaic Complementary Power Generation Project";

2. In April 2019, Wenzhou Ouwei Economic Development Investment Co., Ltd. and Wenzhou Letai Photovoltaic Power Generation Co., Ltd.

Signing a lease contract for the right to use state-owned agricultural land;

3. On May 9, 2019, the Housing and Construction Bureau of Wenzhou Economic and Technological Development Zone issued a notice on the Wenzhou Loctite 150MW

Planning opinions on the construction of the agricultural photovoltaic complementary power generation project, agreeing to the construction of this project;

4. On May 22, 2019, the Water Conservancy Bureau of Wenzhou Economic and Technological Development Zone issued a notice on the Wenzhou Letai 150MW Agricultural Photovoltaic Project.

Opinions on the construction of complementary photovoltaic power generation projects, and agree to the construction of this project;

5. On May 31, 2019, the Economic and Technological Development Zone Branch of the Wenzhou Municipal Bureau of Land and Resources issued a notice on the Wenzhou Loctite

Review opinion on the 150MW agricultural photovoltaic power generation project;

6. On July 29, 2019, Wenzhou Economic and Technological Development Zone Administrative Approval Bureau issued the "Wenkai Approval Environment [2019] 73

The review opinion on the environmental impact report of the Wenzhou Letai 150MW agricultural-photovoltaic complementary power generation project was issued in Document No.

7. On November 28, 2019, the project started construction.

8. On September 29, 2020, the project was completed and started trial operation of power generation.

9. In October 2020, China Science and Technology Huachuang International Engineering Design Consulting Group Co., Ltd. completed the preparation of the Wenzhou Letai Agricultural

Implementation Plan for the 150 MW Photovoltaic Complementary Power Station Agricultural Project. From December 2020 to April 2021, the photovoltaic panels will be

The fields are renovated, the site is leveled, construction waste and weeds are removed, and field drainage ditches and farming roads are built.

10. On December 7, 2021, Wenzhou Municipal Ecological Environment Bureau issued the document "Wenkaihan Approval Radiation [2021] No. 1"

Review of the Environmental Impact Report Form for the Supporting Substation Project of the Wenzhou Letai 150MW Agricultural Photovoltaic Power Generation Project

Opinion;

11. On October 11, 2021, the Wenzhou Water Conservancy Bureau issued a notice on the Wenzhou

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

12. In April 2022, Wenzhou Letai Photovoltaic Power Generation Co., Ltd. and Zhejiang Jiantou Environmental Protection Engineering Co., Ltd. and other related

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

13. In May 2022, 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

国有土地使用权租赁合同

出租方（简称“甲方”）：温州市瓯飞经济开发投资有限公司

单位法人：金海胜

营业执照号码：91330301050107404L

地址：温州经济技术开发区滨海六路 2189 号旭日小区 1 幢 206 室

邮编： 传真：

承租方（简称“乙方”）：温州乐泰光伏发电有限公司

企业法人：陆川

营业执照号码：91330301MA2CNBD569

注册地址：浙江省温州市温州经济技术开发区滨海二道 1318 号

邮编： 传真：

依据温州浙南沿海先进装备产业集聚区（经开区、瓯飞）管理委员会，与浙江正泰新能源开发有限公司签订的《温州正泰 150 千瓦农光互补光伏发电项目投资合作协议》，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 温州瓯飞一船围垦生产配套区，总面积 3074 亩（以下称“租赁土地”），土地性质为国有一般农业用地（以产权证等政府批准文件为准）。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乙方通过温州联合产权交易中心有限公司组织对温州瓯飞一期围垦生产配套区地块二十年租赁权的投标式公开拍卖式取得，甲方对该土地有合法出租的权利。

第 2 条 租赁期限

2.1 土地使用权租赁期限为 20 年，自 2019 年 5 月 1 日至 2039 年 4 月 30 日止。双方同意租赁期满后保持本协议租赁条件不变自动续租 5 年。甲方确保前 10 年租赁地址不变，后 10 年若因政府规划原因造成不能续租的，在政府提供外选址的条件下，乙方服从迁址，甲方可以协助乙方获得合理补偿。

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。

2.4 为充分保证乙方的租赁权益，甲方确认，上述租赁期限和续签合同的租赁期限均未超过租赁土地承包期的剩余期限，乙方在整个租赁期限内能够正常使用租赁土地。如非因乙方原因，导致乙方在租赁期限内不能使用土地的，甲方应帮助协调解决，并确保乙方可以继续使用土地。

第3条 租赁用途

乙方租赁土地用于光伏发电项目建设 and 现代农业种植，不得擅自改变土地利用性质。乙方需在一年内开展农作物种植。乙方负责项目各项审批和建设 work，并及时完成与项目相关的手续，自行承担相关费用。符合国家政策，符合国家安全生产条例。

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将不存在任何纠纷的土地使用权交付乙方，租赁土地未被承包或出租给第三人，租赁土地上未设定任何抵押、质押或其他限制性的权利，也没有将其全部或部分出租或作价入股。若发生任何纠纷，甲方解决纠纷。

甲方确认交付前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育苗种植等费用。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，并无需任何补偿且产生的处置费用由甲方承担。

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 土地使用权农用地（共计 3065 亩）的不含税租金按照人民币 630 元/亩·年计算，租金每过 5 年递增 10%。项目配套设施用地（共计 9 亩）的不含税租金按照人民币 16000 元/亩·年计算，租金每过 5 年递增 8%。乙方每年付清当年度租金，第一年度租金支付时间为合同双方签字盖章生效后 20 个工作日内支付，第二年租金支

付时间为 2020 年 5 月 10 日，以后类推。租金支付数额按照交付乙方使用的面积计算。甲方应于合同约定付款日期，提前 10 个工作日开具符合国家政策的，内容为：租赁费的增值税专用发票。

乙方逾期未付的租金，甲方每月按万分之三收取违约金。

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面积相应减少。

5.3 甲方先行向乙方提供增值税专用发票，税点由乙方承担。乙方在收到甲方提供的增值税专用发票后的 20 个工作日内支付相应款项。否则乙方有权延迟支付相应费用而不被视为违约，亦无须承担任何违约责任。

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，若国家相关部门给予该项目补偿时，相关补偿应全部归乙方所有。

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。

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的

定的正常使用。

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

7.1.6 甲方确认乙方可将该租赁土地用于农光互补光伏电站项目建设及运营，除新建升压站、建设生活区用房等永久性建筑改变土地用途外严格按照国家规定办理相关转用审批外，乙方未改变租赁土地的性质。

7.1.7 甲方应允许乙方在承租的土地上新建、扩建、改建永久性或临时性建筑物、构筑物，并协助乙方获得必需的法定批准文件。

7.2 乙方的权利和义务：

7.2.1 乙方有权根据本合同约定使用土地。

7.2.2 乙方应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，否则应负责修复；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汛、安全生产等工作。

7.2.5 租赁期满不再续租的，乙方应及时、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柱、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 因政策原因导致该项目无法正常进行，乙方有权终止本合同。

8.2.5 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

9.1 任何一方违反本合同约定，另一方可以要求或采取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。

9.2 若甲方无法按照本协议的约定向乙方提供该地块相关合规性文件，致使乙方无法正常使用该地块，乙方有权解除本协议而无须承担任何责任，给乙方造成损失的，甲方予以赔偿。

第10条 其他规定

10.1 合同及其附件构成双方全部合同，并取代双方以前就该等
事项而达成之全部口头或书面的协议、合约、理解和通信。

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，如前已被纳入本合同。

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。

(本頁為簽字頁)

甲方(盖章): 温州市隆飞经济开发投资有限公司

法人代表(签字):



乙方(盖章): 温州乐泰光伏建设有限公司

法人代表(签字):



签订日期:

Annex 3

浙江省企业投资项目备案(赋码)信息表

备案机关: 区经济发展局

备案日期: 2019年04月23日

项目基本情况	项目代码	2019-330300-44-03-023254-000						
	项目名称	温州乐泰150兆瓦农光互补光伏发电项目						
	项目类型	备案类(内资基本建设项目)						
	建设性质	新建	建设地点		浙江省温州市乐清产业集聚区(经开区)			
	详细地址	温州观飞一期围垦生产配套区						
	国标行业	太阳能发电(4416)	所属行业		电力			
	产业结构调整指导目录	除以上目录外的新能源业						
	开工时间	2019年06月	拟建成时间		2020年12月			
	是否包含新增建设用地	否						
	总用地面积(亩)	3065.0000	新增建筑面积(平方米)		3000			
	总建筑面积(平方米)	3000	其中:地上建筑面积(平方米)		3000.0000			
	建设规模与建设内容(生产能力)	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,同时结合现代农业开发种植经济农作物。项目占地约3065亩,临时接入2.5兆瓦太阳能发电,总体150兆瓦太阳能发电。项目建成后25年内平均发电量18746万千瓦时。						
项目联系人姓名	黄晓	项目联系人手机		13777222978				
接受批复邮寄地址	无							
项目投资情况	总投资(万元)							
	合计	固定资产投资103500.0000万元					建设期利息	铺底流动资金
		土建工程	设备购置费	安装工程	工程建设其他费用	预备费		
	105000.0000	700.0000	84000.0000	5000.0000	5000.0000	8800.0000	0.0000	1500.0000
	资金来源(万元)							
合计	财政性资金	自有资金(非财政性资金)			银行贷款	其它		
105000.0000	0.0000	105000.0000			0.0000	0.0000		
项目单位基本	项目(法人)单位	温州乐泰光伏发电有限公司		法人类型		企业法人		
	项目法人证件类型	统一社会信用代码		项目法人证照号码		91330301MA20NB0609		
	单位地址	温州市温州经济技术开发区滨海二道1318号		成立日期		2016年03月		

情况	注册资金(万)	1000.0000	币种	人民币
	经营范围	太阳能发电;售电服务(凭有效《电力业务许可证》经营);太阳能光伏发电系统的研发和技术转让;光伏发电设备的销售;光伏发电技术咨询。		
	法定代表人	周健	法定代表人手机号码	13777702978
项目变更情况	登记赋码日期	2019年04月23日		
	备案日期	2019年04月23日		
	第1次变更日期	2020年06月28日		
项目单位声明	<p>1.我单位已确认知悉国家产业政策和准入标准,确认本项目不属于产业政策禁止投资建设的项目或实行核准制管理的项目。</p> <p>2.我单位对录入的项目备案信息的真实性、合法性、完整性负责。</p>			

说明:

- 1.项目代码是项目整个建设周期唯一身份标识。项目申报、办理、审批、监管、延期、调整等信息,均需统一关联至项目代码。项目代码是各级政府有关部门办理审批事项、下达资金、开展审计监督等必要条件。项目单位要将项目代码标注在中报文件的显著位置。项目审批监管部门要将代码印制在审批文件的显著位置。项目业主单位提交申报材料时,相关审批监管部门必须校验项目代码,对未提供项目代码的,审批监管部门不得受理并应引导项目单位通过在线平台获取代码。
- 2.项目备案后,项目法人发生变化,项目拟建地址、建设规模、建设内容发生重大变更,或者放弃项目建设的,项目单位应当通过在线平台及时告知备案机关,并修改相关信息。
- 3.项目备案后,项目单位应当通过在线平台如实报送项目开工建设、建设进度、施工等基本信息。项目开工前,项目单位应当登录在线平台报备项目开工基本信息。项目开工后,项目单位应当按有关项目管理规定定期在线报备项目建设动态进度基本信息。项目竣工后,项目单位应当在线报备项目竣工基本信息。

Annex 4

温州经济技术开发区海洋渔业与农林局

温开海农函〔2018〕5号

关于《温州乐泰 150 兆瓦农光互补光伏发电项目可行性报告》审查意见的函

区招商服务中心，浙江正泰新能源开发有限公司：

2018年5月31日，我局组织浙江大学、浙江省农科院和温州市农科院五位专家，针对《温州乐泰 150 兆瓦农光互补光伏发电项目可行性报告》进行资料审阅和现场征询，对项目存在的问题展开了分析讨论和研究，再从各自专业角度进行评审。认为该报告初步可行，但需保证和完善审查意见后再进行项目实施。形成的审查意见如下：

一、确保农业用地性质不变

1. 高度重视农光互补光伏发电项目的农业属性和生态属性

土地是农业生产的基础，保护农田是保障粮食安全的基本条件。在农业用地上进行农光互补光伏发电项目，一定要保证农业用地的基本农业生产功能，保护环境生态，不能够只追求发电的效益，而忽视农业生产和环境生态。

2. 确定作物最低产量或经济效益

明确单位土地面积上的作物产量或经济效益不得少于未安装前的一定比例（例如：日本农林水产省通过光伏农业方案的主要条件为土地上的作物产出不得少于未安装前的20%）。

二、光伏设备的布局要合理

1. 满足作物生长的基本要求

光伏组件的高度、东西间距、南北间距、光伏板尺寸等参数要合理配置，保证农田光照强度和分布能满足作物生产的基本要求，保证光伏农业的农业部分的基本功能。

光伏板会严重影响作物栽培区的光照强度和时长，并且随季节变化。报告中虽提供了一些可供选择的作物品种及对光照的需求，但没有分析光伏板下光照在那些季节满足什么作物品种光照需求，文中光照分析及对产量品质的影响评估有待完善。如严重影响农业生产，则农光互补不成立，相当于改变土地使用性质。

P103 提供的光照分布图过于简单。重新补充详细评估光伏组件的高度、东西间距、南北间距、光伏板尺寸等要素对农田光照分布的周年变化规律，通过比较合理的光伏组件方阵布局方案来改善田间光照环境。需要根据当地区域常年光照情况，通过精确参数。

2. 满足农业机械的使用

大面积农业生产一般要使用农业机械，光伏组件的规格与分布要符合国家和地方有关规范和要求，给农业机械的使用留有余地。

三、农光温室环境调控需评估

以温室为基础骨架，太阳能组件平铺在温室顶部的方式，同样要考虑到植物能获得的光照强度和分布。如果温室被面不合理，区域光照资源不充足，均会造成棚内光照条件不均匀或相对较弱，对棚内作物生长会产生一定影响。另外，太阳能组件在工作状态下可产生热量，这些热量和温度对作物的影响以及对温室环境调控情况也需要补充评估（在冬季可提升棚内温度，但在夏季会造成棚内温度过高，作物越冬困难）。

四、土壤的排盐提质方案需细化

排盐提质方案。项目用地为新垦土地，报告提供的土壤检测数据表明，盐分含量高，不适合水稻等许多农作物生长，降低土壤盐分含量，改善土壤结构是首要任务。在P98和P100提出的挖沟灌水洗盐和台田盐碱地利用模式中，需要进一步明确沟渠分布与光伏组件方阵布局的契合。

可行性报告中提出合理施用有机肥等肥料或有机物，促进和培育先锋植物生长，以提高土壤有机质水平，该部分还

需要详细说明。另外，排盐改良时间安排需要明确是改良与安装同步还是先改良后安装。排盐改良目标和进度要进一步明确，特别需要与该地收储时的目标要求相符合。

五、作物种类选择及农事安排

1. 适宜作物种类的选择

本项目在海涂围垦地做光伏农业，作物需要选择耐阴植物、耐盐性好的植物，慎选需要强光合作用的农作物（如项目中列举的油菜、向日葵）。建议项目建设单位利用温州科技力量，合作开展研究和田间试验，尽快评估适宜该项目的作物种类，投入产出比，经济效益等。

2. 农事安排

进一步完善农业生产运营的规划设计。农光互补的种植茬口安排、育苗设施（自己育苗还是买苗）、生产管理、病虫害防治农事安排等还需要进一步完善补充。

3. 食用菌及中草药

如若土地利用功能许可，光伏下面可以发展一些喜阴中药材和食用菌，比如：金针菇、双孢蘑菇、袖珍菇等。

六、项目经济效益需评估

项目报告中对项目环境效益和农业效益进行了分析，未见对项目的经济效益进行分析，建议加以评估。

七、报告编制和设计依据需引用最新版本

项目报告引用的编制设计依据（规范、规程和标准等）有一些已废止或更新，应引用最新的版本，如：《钢结构设计规范》GB50017-2003，《建筑设计防火规范》GB50016-2006，《建筑给水排水设计规范》GB50015-2003，《公共建筑节能设计标准》GB50189-2005，《民用建筑热工设计规范》GB50176-93，《采暖通风与空气调节设计规范》GB50019-2003，《建筑采光设计标准》GB/T50033-2001，《民用建筑热工设计规范》GB50176-93，《关于进一步促进浙江省地面光伏电站健康发展的通知》等。

八、重要数据前后不一致

1、项目年平均发电量

(1) 预计年平均发电量可达到 15106.9 万度（第 3、16、17、87 页）；

(2) 预计平均每年可为电网提供电量 8572.2 万 kWh（第 7 页）；

(3) 预计平均每年的发电量为 9733.2 万 kWh（第 68 页）。

2、项目环境效益

(1) 相当于每年可节约标准煤约 46076.05t，每年减少二氧化碳(CO₂)排放量约 122970.17t，SO₂排放量 936.63t，

NOx 排放量约 317.24t (第 7, 87 页);

(2) 相当于每年可节约标准煤约 3.48 万 t, 每年减少排放温室效应性气体二氧化碳 (CO₂) 8.82 万 t, 每年可减少烟尘排放量约 404.4t (除尘器效率取 99%), SO₂ 排放量约 333.5t (煤全硫分取 0.7%, 未脱硫), NOx 排放量约 346.8t (第 68 页)。

3、每度电耗煤

(1) 火电煤耗 (标准煤) 每度电耗煤 305g (第 7 页);

(2) 【计算数据】 0.36kg/度 (第 16 页, 图中说明)。

附件: 参加审议的专家组成员

温州经济技术开发区与农林局

201 年 月 4 日



Annex 5

温州经济技术开发区住房与建设局
关于温州乐泰 150 兆瓦农光互补光伏发电项目的规划意见

温州乐泰光伏发电有限公司：

依据你公司在温州经济技术开发区经济发展局的温州乐泰 150 兆瓦农光互补光伏发电项目的备案信息表，你公司租赁的温州雁飞一期围垦生产配套区的土地 3074 亩，用于建设 150 兆瓦农光互补光伏发电项目，向我局征询规划意见一事。经我局核实，根据《温州市城市总体规划（2000-2030 年）2016 年修订版》，该租赁地块不属于城市建设用地范围内。我局对该地块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无意见。

温州经济技术开发区住房与建设局

2018 年 5 月 9 日



Annex 6

温州经济技术开发区水利局

关于温州乐泰 150 兆瓦农光互补光伏发电 项目建设的意见

温州乐泰光伏发电有限公司:

依据温州浙南沿海先进装备制造产业集聚区(经开区、瓯飞)管理委员会与浙江正泰新能源开发有限公司签订的《温州乐泰 150 兆瓦农光互补光伏发电项目投资合作协议》的约定,你公司租赁温州瓯飞一期围垦生产配套区土地 3074 亩,用于建设 150 兆瓦农光互补光伏发电项目,向我局驻地项目建设请示。经我局核查,该租赁地块范围内目前没有河道,水闸等水利设施,也没有相关水利设施的规划,我局对在该地块上建设光伏发电项目无异议。

温州经济技术开发区水利局
2019 年 5 月 12 日

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Annex 7

关于温州正泰 150 兆瓦农光互补光伏发电项目的审查意见

浙江正泰新能源开发有限公司租用椒飞一期渔屋生产配套区耕地 3074 亩土地用于开发农光互补项目需严格按照《关于支持光伏扶贫和规范光伏发电产业用地的意见》（国土资规【2017】8 号）的规定使用土地，变电站及运行管理中心，集电线路塔杆基础用地按建设用地管理，依法办理建设用地审批手续；场内道路用地可按农村道路用地管理，利用农用地布设的光伏方阵可不改变原用地性质，除桩基用地外，严禁硬化地面，破坏耕作层，严禁抛荒、撂荒；采用直埋电缆方式敷设的集电线路用地，实行与项目光伏方阵用地同样的管理方式；光伏方阵用地按农用地，未利用地管理的项目退出时，用地单位应恢复原状。

特此审查意见。

温州市国土资源局经济技术开发区分局

2019 年 5 月 31 日

Annex 8

温州经济技术开发区行政审批局文件

温开审批环〔2019〕73号

关于温州乐泰 150 兆瓦农光互补光伏发电项目 环境影响报告表的审查意见

温州乐泰光伏发电有限公司：

由浙江中蓝环境科技有限公司编制的《温州乐泰150兆瓦农光互补光伏发电项目环境影响报告表》及你单位有关申请报告收悉。我局按照建设项目环境管理有关规定对该项目进行审查及公示。经研究，该项目环境影响报告表的审查意见如下：

一、原则同意本项目环评结论和建议，同意你公司租用温州市瓯飞经济开发投资有限公司位于温州瓯飞一期围垦生产配套区，实施温州乐泰150兆瓦农光互补光伏发电项目。项目总投资105000万元，租赁建筑面积2400m²。

二、本项目主要产品及产量、生产设备及工艺、规模详见报告表。

三、本项目在设计、建设、运行等过程中，必须落实报告表

中提出的各项污染防治措施和建议,环境保护设施与主体工程同时设计、同时施工、同时投产使用的“三同时”制度,污染治理设施要由有资质的环境工程设计单位进行设计施工,确保各项污染物达标排放,具体要求:

(一) 做好施工期的污染防治工作

1. 扬尘及其他废气的防治,要加强现场管理,设置封闭性围挡,增加洒水作业次数和洒水量,车辆驶出出场清洗,开挖后及时回填,水泥类物资不能露天堆放,采用商品混凝土代替现场搅拌混凝土,最大限度减少扬尘对周围大气环境的影响。

2. 施工噪声的防治,尽量减少高噪声设备的使用,加强设备维护,合理安排施工时间,尽量安排在白天施工,必要夜间施工的要报主管部门审批,施工期间必须严格执行《建筑施工场界噪声限值》(GB12523-2011)中的相关标准。

3. 施工废水、固废的防治,施工中产生的生活污水经化粪池预处理后委托环卫部门定期进行清理和处置,泥浆废水经沉淀处理,不得外排,各种建筑垃圾,首先尽量回收利用,不能利用的要及时外运处理,严禁擅自堆放和倾倒附近的河道,生活垃圾集中定点收集,及时清运,不得任意堆放和丢弃。

4. 水土保持,施工后要尽量恢复原有的土地功能,部分土地还应进行表面植被处理,水土保持各项措施应配合主体工程同步进行,以免留下后患。

(二) 做好营运期间的污染防治工作

1. 项目不产生生产废水，生活废水经预处理达到《城市污水再生利用农田灌溉用水水质》（GB20922-2007）三中亚抽蔬菜标准后（氨氮参照执行《污水综合排放标准》（GB8978-1996）一级排放标准），回用于灌溉经济作物，不外排。

2. 项目无废气污染物产生，食堂油烟废气排放执行《饮食业油烟排放标准（试行）》（GB18483-2001）中的小型标准。

3. 项目厂界噪声执行《工业企业厂界环境噪声排放标准》（GB12348-2008）中的4类标准。

4. 一般固体废物处置执行《一般工业固体废物贮存、处置场污染控制标准》（GB18599-2001）及其修改单，《中华人民共和国固体废物污染环境防治法》（修订）和《浙江省固体废物污染环境防治条例》（修订）中的有关规定；危险废物贮存执行《危险废物贮存污染控制标准》（GB18597-2001）及其修改单中的有关规定；生活垃圾处理参照执行《城市生活垃圾处理及污染防治技术政策》（建城〔2000〕120号）和《生活垃圾处理技术指南》（建城〔2010〕61号）以及国家、省、市关于固体废物污染环境防治的法律法规。

四、项目主要污染物排放总量控制要求不得超出环评提出的指标。

五、项目的环境影响评价文件经批准后，建设项目的性质、规模、地点、采用的生产工艺或者防治污染、防止生态破坏的措施发生重大变动的，建设单位应当重新报批建设项目的环境影响

评价文件。项目的环境影响评价文件自批准之日起超过五年，方决定该项目开工建设的，其环境影响评价文件应当报原审批部门重新审核。

六、项目要按照规定程序进行建设项目竣工环境保护验收，经验收合格，方可正式投入运行。

七、若你单位对本审批意见内容不服的，可以在六十日内向温州市人民政府提起行政复议，也可以在六个月内向有管辖权的人民法院提起诉讼。

温州经济技术开发区行政审批局

2019年7月29日

抄送：温州市环境保护局行政审批处，开发区管委会（室）。

温州经济技术开发区行政审批局

2019年7月29日印发

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Annex 9

温州市生态环境局经济技术开发区分局文件

温开环审批福〔2021〕1号

关于温州乐泰 150 兆瓦农光互补光伏发电项目 配套升压站工程环境影响报告表的审查意见

温州乐泰光伏发电有限公司：

你单位委托杭州卫康环保科技有限公司编制的《温州乐泰 150 兆瓦农光互补光伏发电项目配套升压站工程环境影响报告表》（以下简称报告表）已收悉。我局按照建设项目环境管理有关规定对该项目进行审查，意见如下：

一、原则同意《报告表》的结论。温州乐泰光伏发电有限公司拟在温州瓯飞工程一期围垦生产配套区实施建设总容量为 150 兆瓦太阳能光伏电站，占地约 3074 亩（2049331.33 m²，其中光伏发电场 3064 亩和生产管理区域 9 亩），安装光伏组件、逆变器、150MW/110kV 光伏升压变电站等光伏设备，同时结合现代农业开发种植经济农作物，形成“上可发电，下可农业种植”的发电模式。项目预计首年的发电量为 18746.7 万 kWh，在 25 年运营周期中可实现总发电量 418950.4 万度电，年平均发电量可达到 16758.0 万度电，年平均利用小时数 1117h。该项目主体工程非放射性内容环境影响报告由浙江中蓝环境科技有限公司于 2019 年 6

后编制，于2019年通过环保审批（温开审批环[2019]73号）。

二、你单位在工程设计、施工中必须认真落实《报告表》提出的各项环保对策措施，并做好以下几方面工作：

（一）做好电磁环境保护工作，确保项目周边的工频电、磁场均符合《电磁环境控制限值》（GB8702-2014）；声环境执行《声环境质量标准》（GB3096-2008）；废油与废旧蓄电池等固体废物属危险废物，贮存执行《危险废物贮存污染控制标准》（GB18597-2001）及其修改单中的有关规定，收集后要委托有资质单位安全处置。

（二）加强施工期环境保护管理，工程保养水、施工冲洗水、生活污水等必须经处理达标，合理处置；施工期间必须按《建筑施工场界噪声限值》（GB12523-2011）进行控制，夜间禁止高噪声作业，不得噪声扰民；施工过程中及时恢复施工道路和临时施工用地的原有土地功能，做好场地平整和植被恢复，并做好项目的生态保护。

（三）加强与公众的沟通与相关解释工作，减少公众对该项目安全防护及电磁辐射的疑虑，确保项目的顺利实施。

三、项目建设必须严格执行环境保护“三同时”制度，在申请建设项目竣工环境保护验收，经验收合格后，方可正式投入运行。

温州市生态环境局

2021年12月7日





Annex 10



建设工程竣工验收报告

工程名称	温州乐泰 150MW 农业光伏项目
工程地址	浙江省温州市瓯海区梧槽乡梧槽村
工程竣工验收主要内容	工程竣工验收，150MW 主要内容：光伏阵列、电站附属、电站配套设施、设计、设备、材料的采购、设备安装与调试工作
开工日期	2019年11月29日
竣工验收日期	2020年8月29日
建设单位名称	温州乐泰光伏发电有限公司
施工单位名称	浙江正泰新能源开发有限公司
设计单位名称及资质等级	中国能源建设集团浙江省电力设计有限公司 甲级，工程设计证书资质等级 资质证书编号：A133007109
监理单位名称及资质等级	浙江正泰电力工程监理有限公司 甲级，电力工程监理甲级 资质证书编号：E133029089-4/1
监理单位名称及资质等级	浙江正泰新能源开发有限公司 甲级，电力工程施工总承包贰级 资质证书编号：B333370860

工程概述	<p>2019年11月28日 开工 2020年6月25日 竣工、竣工验收完成 2020年9月18日 电气安装调试完成 2020年9月20日 高低压设备安装调试完成 2020年9月28日 并网发电 2020年9月30日 电站正式并网发电</p>
工程名称	1000 亩
工程简介	<p>在整个工程施工过程中,参与建设的各相关单位严格按照工程建设程序组织工程建设管理工作,认真执行《建设工程质量管理条例》。</p> <p>监理单位组织对监理单位的项目经理部,配备了专业的施工管理人员和施工设备,建立了完善的质量管理体系,加强各施工阶段质量管理的教育,严格执行施工操作规范和施工验收规范,严格执行工程设计交底施工,认真领会设计意图,严格执行“三检”制度,对施工过程进行质量检查,对工程施工中出现的问题,按照“三不放过”原则认真处理,确保了单位工程的质量,并严格按照各个项目的验收规范要求。</p> <p>监理单位严格按照监理规范、监理规划、监理细则的要求,认真执行并建立监理制度和各项规章制度,对施工过程中出现的技术问题和质量问题,及时与设计单位沟通,及时解决,对各项工作进行跟踪监督管理,对关键部位及重要部位和位认真落实监督管理,确保了工程质量始终处于监理单位管理之中。</p> <p>设计单位,监理单位站等单位在整个工程建设过程中严格按照国家规范及地方标准规范及时认真,地参与工程验收严格按照每一道工序,确保了每个分部工程一次验收合格。</p> <p>监理单位 1000 亩光伏电站项目达到验收和验收要求,质量、设计、监理单位对本工程的验收及主体结构进行验收,施工质量监督。</p>
施工验收标准	<p>本工程严格按照国家规范和行业标准要求,施工工艺,质量满足设计需求。</p>



参 加 单 位	设计 单位 意见	单位负责人（或授权代表）， 2020年10月30日	
	监理单位 意见	单位负责人（或授权代表）， 2020年10月30日	
	监理单位 意见		(公章)
	建设单位 意见	单位负责人（或授权代表）， 2020年10月30日	

Addendum 11

温州市水利局文件

温水许〔2021〕36号

温州市水利局关于温州乐泰 150 兆瓦农光互补光伏发电项目水土保持方案的批复

温州乐泰光伏发电有限公司：

你单位（统一社会信用代码：91330301MA2CNBD509）《关于要求批复〈温州乐泰 150 兆瓦农光互补光伏发电项目水土保持方案报告书〉的申请报告》及委托浙江泓澄水利工程有限公司编写的《温州乐泰 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、工程位于温州市瓯飞一期围区生产配套区块，场址坐标约为北纬 27° 53′ 56、东经 120° 53′ 22。建设内容包括 150 兆瓦太阳能光伏电站、110kV 光伏升压变电站、现代农业农作物种植。工程占地总面积 205.089hm²，其中永久占地 204.936hm²，临时占地 0.153hm²（临时道路）。工程建设总工期 17 个月，已于 2019

年11月开工，2021年4月完工。工程总投资105000万元，其中土建投资为700万元。

项目涉及土石方开挖、填筑，扰动地表面积205.089hm²，建设期间如不采取有效的防治措施，将造成水土流失量684t。本工程已完工，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15.82万m³(均为一般土方)。

(三)工程土石方填筑总量16.91万m³(其中土方16.23万m³、石方0.65万m³、表土0.03万m³)。

(四)工程土石方借方总量1.09万m³(其中土方0.41万m³、石方0.65万m³、表土0.03万m³)，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205.089hm²，水土流失防治责任者为温州乐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一级标准。至设计水平年2021年，水土流失治理度达到98%，土壤流失控制比达到1.25，渣土防护率达到97%，林草植被恢复率达到98%，林草覆盖率达到14%，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：场地平整及翻耕、农田排水沟；

Ⅱ区：

工程措施：排水工程、绿化覆土；

植物措施：景观绿化、抚育管理；

Ⅲ区：

工程措施：场地平整；

临时措施：临时排水沟；

（以上措施实际已实施。）

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 673.32 万元，新增水保投资 182.36 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”。本项目水土保持补偿费计征面积为2050890m²，需缴纳水土保持补偿费1640712元。请你单位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浙南产业集聚区农业农村和

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泓澄水利工程技术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。



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，浙南产业集聚区管委会农业农村和水利局，综合行政执法局

温州市水利局办公室

2021年10月11日印发

Addendum 12



中华人民共和国 税收完税证明

11122021 税票 0700000

税务机关	国家税务总局浙江省税务局	发生日期	2021年12月10日		
纳税人名称	温州市龙湾永中街道永中村	纳税人识别号	33110000MA2C36821889		
税种	增值税附加	人(名称) 科目	所属(属) 税种	征收机关	
未申报纳税纳税人	2021-11-01至2021-11-30	2021-12-10	11401010	国家税务总局浙江省税务局第一分局	

本表以下内容由系统自动生成

税务主管

手写无税

金额合计 (大写) 零元整 温州市龙湾永中街道永中村 2.00000000



备注：本完税证明可通过国家税务总局浙江省税务局电子税务局 (<https://tax.chinatax.gov.cn>) 的“公众服务”-“我的办税”栏目进行查验。

纳税人：浙江省电子税务局

本表以下内容由系统自动生成

Addendum 13



Figure 1 Photovoltaic power generation area



Figure 2 Photovoltaic power generation area



Figure 3 Photovoltaic power generation area



Figure 4 Reclamation of land under photovoltaic panels



Figure 5 Recultivation of land under photovoltaic panels



Figure 6 Recultivation of land under photovoltaic panels



Figure 7 Recultivation of land under photovoltaic panels



Figure 8 Recultivation of land under photovoltaic panels



Figure 9: Recultivation under photovoltaic panels



Figure 10 Drainage ditch under photovoltaic panels



Figure 11 Drainage ditch under photovoltaic panels



Figure 12 Drainage ditches on both sides of the road



Figure 13 Drainage ditches on both sides of the road



Figure 14 Booster station



Figure 15 Greening in the booster station



Figure 16 Greening in the booster station



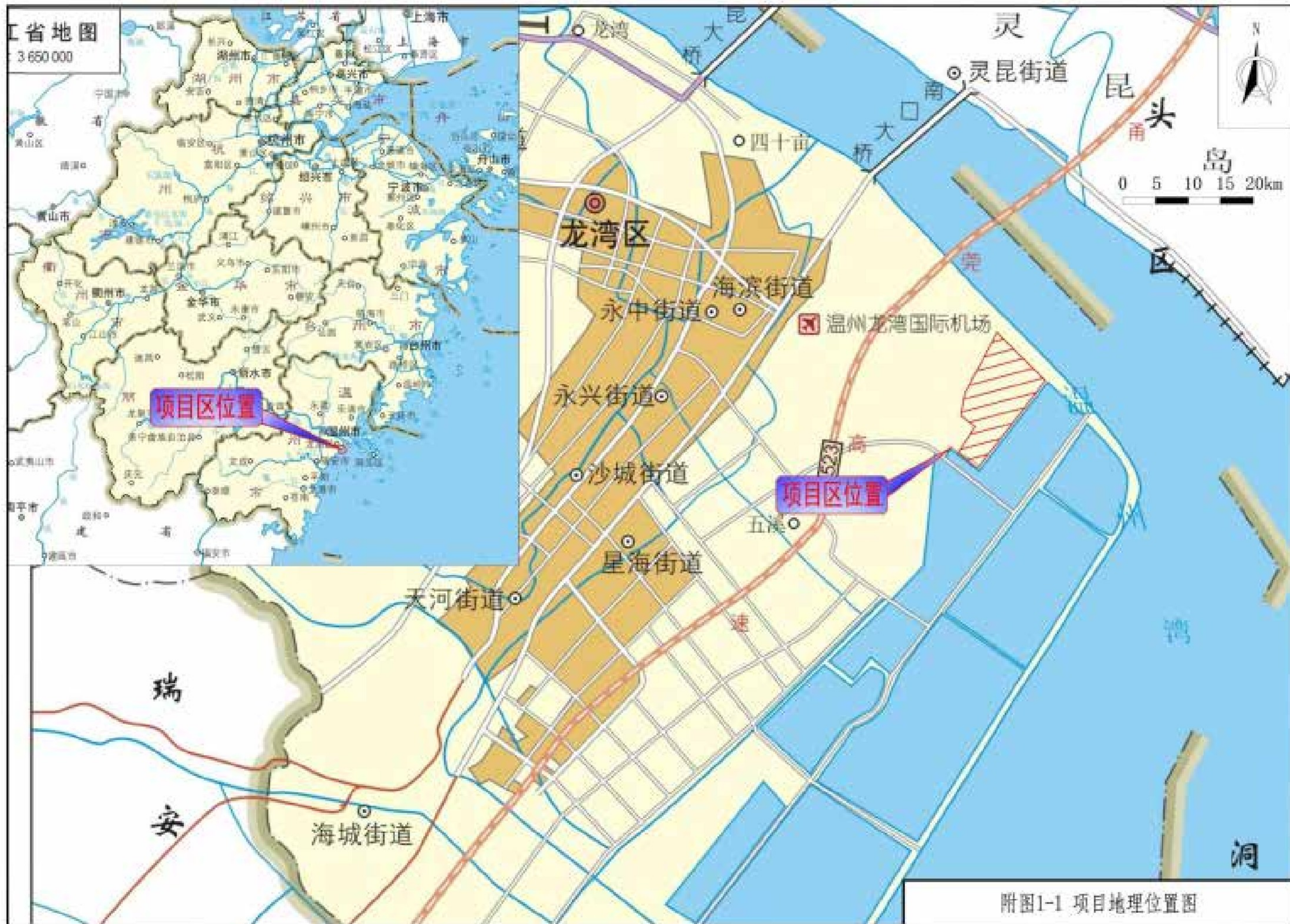
Figure 17 Greening in the booster station



Figure 18 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



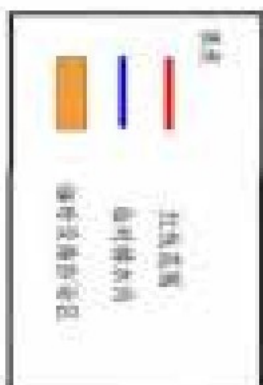
附图1-1 项目地理位置图



附图1-2 项目地理位置图



(114) X=3088891.991
Y=588788.678



(115) X=3088881.895
Y=588856.479



X=3088986.836 (113)
Y=588323.158

X=3088954.220 (112)
Y=588893.697

防治分区	措施类型	设计措施
I区光伏电站区	工程措施	1. 边坡平整及喷播; 2. 农田水利
II区升压站区	工程措施	1. 排水工程; 2. 硬化路面
III区临时堆料区	植物措施	1. 草皮护坡; 2. 撒草籽
IV区临时堆料区	植物措施	1. 撒草籽

升压站水土流失防治责任范围、防治分区及措施总体布局图 1:500

说明: 本图采用国家2000坐标系, 高程采用1985国家高程基准, 单位: 米。

附图 3-1 项目水土流失防治责任范围及水土保持设施竣工验收图

