



中国长江电力股份有限公司

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2022年度 社会责任报告

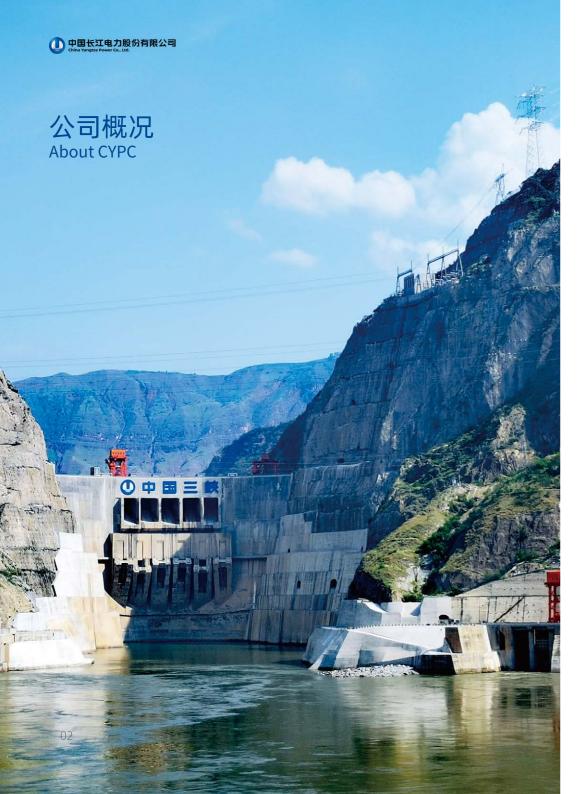
CORPORATE SOCIAL
RESPONSIBILITY REPORT 2022



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公司简介 Company Profile

长江电力是由中国长江三峡集团有限公司作为主发起人设立的股份有限公司,创立于 2002 年 9 月 29 日,2003 年 11 月在上交所 IPO 挂牌上市。2020 年 9 月,长江电力发行的"沪伦通"全球存托凭证在英国伦敦证券交易所上市交易。

China Yangtze Power Co., Ltd. (hereinafter referred to as "CYPC") is a limited liability company established by China Three Gorges Corporation ("CTG") as the main sponsor. CYPC, founded on September 29, 2002, was listed on the Shanghai Stock Exchange in November 2003. In September 2020, the Global Depositary Receipts (GDRs) issued by CYPC under the "Shanghai-London Stock Connect" mechanism were listed and traded on the London Stock Exchange.

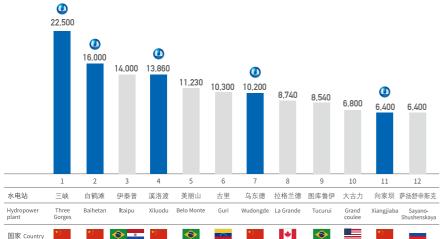
公司主要从事水力发电、投融资、抽水蓄能、智慧综合能源、新能源和配售电等业务,经营区域覆盖中国、秘鲁、巴西、巴基斯坦等多个国家,是中国最大的电力上市公司和全球最大的水电上市公司。由公司运营管理的乌东德、白鹤滩、溪洛渡、向家坝、三峡、葛洲坝六座梯级电站,构成了世界最大清洁能源走廊,有效保障了长江流域防洪、发电、航运、水资源利用和生态安全。

CYPC is mainly engaged in hydropower generation, investment & financing, pumped storage, smart integrated energy, new energy and power distribution & sales etc. in China, Peru, Brazil, Pakistan, and other countries. CYPC has become the largest listed electric power company in China and the largest listed hydropower company in the world. Six giant cascade hydropower plants including Wudongde Hydropower Plant ("Wudongde HPP"), Baihetan Hydropower Plant ("Baihetan HPP"), Xiluodu Hydropower Plant ("Xiluodu HPP"), Xiangjiaba Hydropower Plant ("Xiangjiaba HPP"), Three Gorges Hydropower Plant ("TGHPP"), and Gezhouba Hydropower Plant ("Gezhouba HPP") have formed the world's largest clean energy corridor, effectively ensuring flood control, power generation, navigation, water resource utilization, and ecological security of the Yangtze River Basin.



装机容量(兆瓦)

Installed capacity (unit: MW)



截至 2023 年 1 月,世界装机规模前十二大水电站中五座由长江电力运行管理,三峡电站以 2250 万千瓦的总装机容量居世界第一

As of January 2023, CYPC operated and managed five out of the world's top 12 hydropower plants in terms of installed capacity and ranked first with a total installed capacity of 22.5 GW





为长江提供防洪保障 为社会奉献清洁能源

Providing flood protection for the Yangtze River Basin and contributing clean energy to the society



愿景 Vision

努力创建以水电为核心的世界一流清洁 能源上市公司

Striving to create a world-class clean energy listed company with hydropower as its core business



宗旨 Tenet

国家放心 股东满意同行敬佩 员工幸福

Reassuring the country, satisfying shareholders, being admired by peers, and benefiting the staff



经营理念 Business philosophy

诚信经营 规范治理信息透明 业绩优良

Honest management, standardized governance, information transparency and excellent performance

04 05

专题: 长江电力二十周年

1 中国长江电力股份有限公司

Special subject: 20th Anniversary of CYPC

2022 年,长江电力成立二十周年。二十年间,长江电力取得了令人瞩目的改革发展成就,管理范围从运行管理葛洲坝单座电站拓展到运行管理 6 座巨型水利枢纽组成的"乌东德至葛洲坝"世界最大清洁能源走廊;业务领域从单一的水电站运营管理拓展到发配售电并举、"水风光储"一体化开发运营;公司市值从上市之初不足 500 亿元跃升至超 5000 亿元;同时,通过收购秘鲁路德斯公司和成功发行"沪伦通"全球存托凭证,稳步向世界一流清洁能源上市公司的发展目标迈进。

CYPC celebrated its 20th anniversary of founding in 2022. During the past 20 years, the Company has made remarkable achievements in reform and development. It has extended its management scope from one hydropower plant - Gezhouba HPP to the world's largest clean energy corridor composing of six hydropower plants. It has also grown its business from operation and management of hydropower plants only to power distribution & sales and integrated development & operation of water, wind, solar and stored energy. These moves drove its market value to jump from less than RMB 50 billion in the beginning of listing to over RMB 500 billion now. In the meantime, CYPC has taken steady steps towards its development goal of growing into a world-class clean energy listed company by acquiring Luz del Sur in Peru and issuing the Global Depositary Receipts (GDRs) under the "Shanghai-London Stock Connect" mechanism.

世界最大清洁能源走廊综合效益

Comprehensive benefits of the world's largest clean energy corridor

梯级电站

6座

6 cascade hydropower plants

装机

110台

110 generating units installed

总装机容量

7169.5 万千瓦

A total installed capacity of **71.695 GW**

防洪库容

376 亿立方米

A storage capacity of 37.6 billion m³ for flood control

年平均发电量约

3000 亿千瓦时

installed gross capacity (Hundreds of millions of kilowatt-hours)

相当于减少标煤消耗

9045 万吨

equivalent to a reduction of standard coal consumption of 90.45 million tons

减排二氧化碳

24840 ле

a carbon dioxide emission drop of 248.4 million tons

生产经营指标

Production and operation indicators

管理电站数量(个)

Number of hydropower plants managed

年复合增长率

10.22%

管理电站机组台数(台)

Number of generating units in hydropower plants managed

年复合增长率

Annual compound growth rate

8.48%

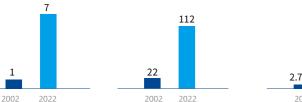
管理电站装机规模(吉瓦)

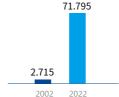
Installed capacity of hydropower plants managed (unit: GW)

年复合增长率

Annual compound growth rate:

17.79 %





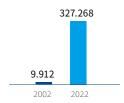
资产总额(+亿元)

Total amount of assets (unit: RMB billion)

年复合增长率

Annual compound growth rate:

19.11%



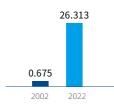
利润总额(十亿元)

Total profits (unit: RMB billion)

年复合增长率

Annual compound growth rate

20.10 %



公司市值(+亿元)

Market value (unit: RMB billion)

年复合增长率

十支口垣下竿

13.90%





·惠誉国际 A+、穆迪 A1 级国际评级 (均与中国国家主权评级一致)

- A+ from Fitch Ratings and Moody's A1 rating (both consistent with the sovereign credit rating in China)
- ·中诚信国际 AAA 级主体评级

(中国企业类最高信用评级)

• AAA entity rating from China Chengxin International Credit Rating Co., Ltd. (the highest credit rating of enterprises in China)

·2022 年 A 股上市公司 ESG 最佳实践案例和"中国上市公司 ESG100强"榜单

 Inclusion in the best ESG practice cases of A-share listed companies and China's Top 100 Listed Companies in ESG

·2022 年中国电力行业"责任信息披露卓越企业"奖

 Award of Excellent Enterprise for Responsibility Information Disclosure in China's power sector in 2022





综合效益

Comprehensive benefits

防洪

Flood control

- · 梯级电站防洪库容 376 亿立方米
- 37.6 billion m³ of storage capacity for flood control of cascade hydropower plants

发电

Power generation

- ·公司所属四座梯级电站年度累计发电量 1855.81 亿千瓦时
- 185.581 TWh of the annual cumulative power generation by the four cascade hydropower plants owned by the Company
- · 公司运营管理的乌东德、白鹤滩 两座梯级电站年度累计发电量

766.68 亿千瓦时

 76.668 TWh of the annual cumulative power generation by the two cascade hydropower plants - Wudongde HPP and Baihetan HPP operated and managed by the Company

航运

Navigation

- ·三峡船闸全年通过船舶 4.06 万 艘次,过闸货运量达 1.56 亿吨
- 40,600 ships passing through the ship lift with 156 million tons of the volume of freight traffic passing through the navigation lock of Three Gorges Dam of the year
- · 向家坝升船机全年载货量超 169 万吨, 累计载货量超 553 万吨
- More than 1.69 million tons of freight through the ship lift at Xiangjiaba HPP of the year, with an accumulated freight of over 5.53 million tons

水资源利用

Water resource utilization

- ·梯级水库消落期向下游补水超 320 亿立方米
- Over 32 billion m³ replenishment downstream during the drawdown of cascade hydropower plants

生态安全

Ecological security

- ·梯级水库全年开展生态调度试验 17 次
- 17 ecological dispatch tests performed yearly in cascade hydropower plants
- ·连续 **12 年**开展产漂流性卵鱼 类繁殖的生态调度试验
- Ecological dispatch tests performed for the propagation of the fish producing drifting eggs for 12 consecutive years



能源保供

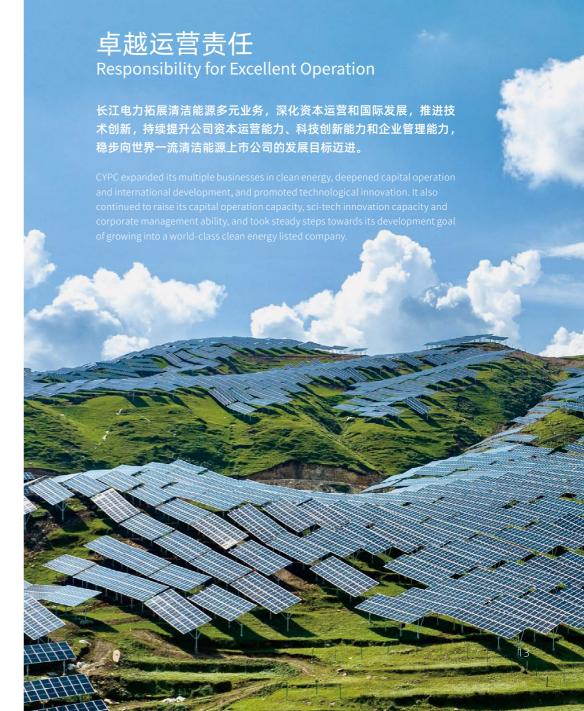
Energy supply guarantee

- ·保供高峰期梯级电站单日最大发电量超 13 亿千瓦时,累计 48 天 每日发电量超 10 亿千瓦时
- 1.3 TWh of the maximum daily power generation of cascade hydropower plants during the peak period of energy supply guarantee, and 1 TWh of the daily power generation for cumulatively 48 days

- ·连续 13 年实现"零人身伤亡、零设备事故"目标
- · Maintaining "zero personal casualty and zero equipment incident" for 13 consecutive

精益管理

- · 流域梯级电站汛期水情 24 小 · 全年节水增发电量达 85.98 亿 时预报精度达 95.8%
- · 95.8% of the forecast accuracy of cascade hydropower plants in the flood season of the river basin
- 千瓦时,综合耗水率创2015 年以来历史同期最好水平
- · 8.598 TWh of the increased power generation from water saving, and the best overall water consumption rate in the corresponding period since 2015
- · 承修设备合格率和一次启动 成功率 100%, 未因检修原 因造成弃水损失
- · 100% of the qualified rate of repaired equipment and one-time startup rate, and no waste water loss caused by repair





清洁能源业务



- 做好抽水蓄能电站投资和 运维管理,跟踪、锁定抽 蓄项目资源 3000-4000 万千瓦
- · Ensuring the investment, operation and maintenance management of pumped storage hydropower plants, having access to 30-40 GW of pumped storage resources



智慧综合能源 Smart integrated energy

- · 在建、运营的分布式光伏项 目总装机容量约 34 万千瓦 在建、运营的用户侧储能项目 总装机容量约 17.65 万千瓦
- · About 340 MW of overall installed capacity of distributed photovoltaic power projects under construction and operation, and around 176.5 MW of overall installed capacity of user-side energy storage projects under construction and operation

New energy

- · 在河北、甘肃等地获取 带坐标新能源资源超 1000 万千瓦
- More than 10 GW of new energy resources with coordinates discovered in Hebei, Gansu and other places

资本运营 Capital operation

- ·全年新增对外投资约 35 亿元 实现投资收益 46 亿元
- · An annual amount of RMB 3.5 billion of new outbound investment, generating a revenue of RMB 4.6 billion
- ·市值最高达 5747 亿元, 稳居 中国A股电力板块首位、全球 电力上市公司前列
- · Ranking first in China's A-share electricity sector and at the forefront of global electricity listed companies with a highest market value of RMB 574.7 billion

国际业务 International business

- · 推动完善秘鲁路德斯等公司 治理体系, 稳步推进卡洛特 电站、巴基斯坦风电项目运 维业务,积极拓展国际配售 电和新能源项目
- · Improving overseas corporate governance systems, including Luz del Sur S.A.A, steadily advancing the operation and maintenance business of Karot hydropower plant ("Karot HPP") and Three Gorges Wind Farm Project in Pakistan, and making active efforts to develop business in international power distribution & sales and new energy
- · 公司《秘鲁跨文化沟诵指南》 入选国际宣传优秀课题;《线 下体验+线上互动,实现文化 交流"零距离"》获得第五届中 国企业国际形象建设国际传播 创新奖
- · Peruvian Cross-cultural Communication Guidelines listed in excellent cases for international publicity; winning the International Promotion Innovation Award at the 5th Collection Event for Chinese Enterprises International Image Building Cases with the Offline Experience + Online Interaction to Realize "Zero Distance" in Cultural Exchanges

科技创新

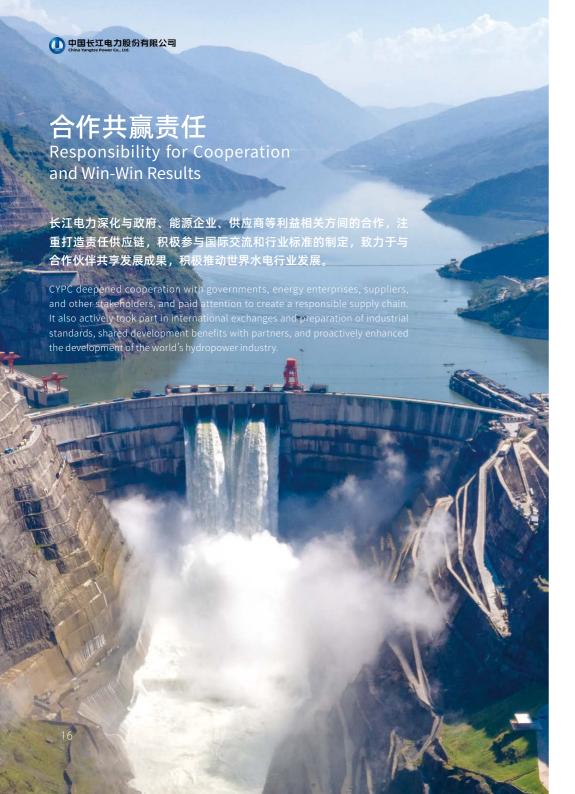
- · 年度研发投入达到 6.74 亿元, 新增科研项目 370 余项
- · Annual R&D investment reached RMB 674 million with over 370 new research projects
- ·全年共获授权专利 373 项,其 中发明专利授权量达到 81 项
- · 373 authorized patents granted in the year, including 81 patents for invention
- · 《防止推移质和漂浮物淤积 的侧向取水结构》课题申请 国际专利合作条约的专利, 并成功获授权美国专利
- · Applying for a patent of Patent Cooperation Treaty with the subject named Lateral water intake structure for preventing silting of bed load and floating debris, and being successfully granted a US patent

公司治理 Corporate governance

- · 厘清职能部门管理边界, 优 化整合投资业务平台,强化新 能源和抽水蓄能业务板块平台 支撑,促进公司业务发展
- · Sorting out the management scope of functional departments, optimizing and integrating investment business platforms, strengthening platform support of new energy and pumped storage sectors, and accelerating business development
- ·推进合规风险排查与整改工作, 组织全员签署合规承诺,开展 合规培训, 培育合规文化
- · Facilitating compliance risk screening and rectification, organizing staff to sign compliance commitments, launching compliance training, and cultivating compliance culture



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多方合作

Multi-party cooperation

- ·与张掖市、秦皇岛市等地方政府,甘肃电投集团、鞍钢矿业等能源企业,华中科技大学、长江科学院等科研院所进行合作,促进共同发展
- Cooperating with local governments (including Zhangye Municipal People's Governmentand Qinhuangdao Municipal People's Government), energy enterprises (including Gansu Province Electric Investment Group Corporation, Ansteel Mining Group), scientific institutes (including Huazhong University of Science and Technology and Changjiang River Scientific Research Institute) for common development

责任供应链

Responsible supply chain

- · 2022年, 合格供应商 **30462个**, 组织供应商培训 **19次**
- Having 30,462 qualified suppliers and launching 19 times of supplier training in 2022
- ·建立供应商分类标准,修订供应商管理 办法,开展供应商培训及座谈会,提升 供应商管理水平
- Developing supplier classification standards, revising supplier managing methods, launching supplier training and seminars, and leveling up supplier management

行业发展

Industrial development

- · 截至 2022 年底,公司共加入包括中 国水力工程发电协会、中国大坝工程 学会等 **87 个**社会团体
- Having joined 87 social organizations including China Society for Hydropower Engineering, Chinese National Committee on Large Dams by the end of 2022
- ·巨型水内冷发电机组纯水水路清洗装备研发及应用、智慧枢纽建设对提升企业管理效能的探索和实践等 45 项技术成果获得学会表彰
- Winning honors from ChineseNational Committee on Large Dams for 45 technological achievements including R&D and application of cleaning equipment for purified water pipes of mega water-cooled generating units, exploration and practice of building an intelligent complex in improving corporate management efficiency

国际交流

nternational exchange

- ·组织参加国际大坝委员会、国际能源署水电技术合作组等国际交流研讨会议,积极开展研讨合作,在合作交流中持续扩大公司在水电行业中的影响力
- Organizing and taking part in international exchange seminars of International Commission on Large Dams, IEA
 Technology Cooperation Programme on Hydropower and other institutes, proactively launching discussion and
 cooperation, and constantly enlarging its influence in hydropower industry in cooperation and exchange

中国长江电力股份有限公司 China Yangtze Power Co., Ltd.

低碳环保责任

Responsibility for Low-Carbon and Environment Protection

长江电力坚持生态优先,积极应对气候变化,推行绿色生产方式,提高水资源利用率,开展生物多样性保护工作,推动形成人与自然和谐 共生的新格局。

CYPC adhered to ecology first, responded actively to climate change, and pursued the green production modes. It also aimed to use water resources more efficiently, protected biodiversity and promoted the harmony between man and nature to a new level



应对气候变化

Response to climate change

- · 2022 年,长江电力温室气体排放总量为 **21517.09 吨**
- ·公司所属四座梯级电站累计发出绿色清洁电能 1855.81 亿千瓦时,相当于减排二氧化碳 1.54 亿吨
- ·坚持开展三峡水库温室气体排放监测与分析研究。研究发现,三峡水库 2022 年温室气体排放量约为 **156 万吨**,与 2021 年相比总体保持稳定
- 21,517.09 tons of the total emissions of greenhouse gas in
- **185.581 TWh** of the cumulative green and clean power generation of the four cascadehydropower plants owned by the Company, equivalent to a carbon dioxide emission reduction of **154 million tons**
- Continuing the monitoring, analysis and study on emissions of greenhouse gas from theThree Gorges Reservoir. Studies found out that the Three Gorges Reservoir emitted about **1.56 million tons** of greenhouse gas in 2022, which was relatively stable compared with data in 2021

高效利用水资源

Efficient use of water resources

- ·聚焦极端气候事件和中长期来水风 险研判,不断提升水文气象预测预 报能力。打造流域水电站群智慧调 度大数据平台,完善水资源管理决 策支持系统,实现水资源高效利用
- Focusing on study and judgment on extreme climate events and long-term & medium-term inflow risks; continuing to improve its ability to predict and forecast meteorological and hydrological conditions; creating a big data platform for intelligent dispatch of hydropower stations in river basins; perfecting the support system for water resource policymaking; realizing efficient use of water resources

绿色运营

Green operation

- ·推进节能改造,加强文明施工管理, 合规处置检修现场废弃物,全年未发 生违法处置行为,危险废物、污水、 废气检测检查达标率 100 %
- Promoting energy-saving renovation; strengthening housekeeping management; disposing of on-site wastes in compliance with regulations; having no illegal disposal activities throughout the year; realizing 100% of compliance rate for tests and inspections of hazardous waste, sewage, and exhaust gas

保护生物多样性

blodiversity protection

- ·积极组织开展梯级水库生态调度试验, 三峡水库促进产漂流性卵鱼类繁殖, 期间湖北宜都江段鱼类总产卵量达 157亿颗,其中"四大家鱼"产卵量达 89亿颗,均创历史新高
- · 开展 **2 次**增殖放流活动,助力近 **70 万** 尾鱼苗放归长江
- Actively organizing ecological dispatch tests of cascade reservoirs and promoting reproduction of fish laying drifting eggs in the Three Gorges Reservoir, during which fish lay 15.7 billion eggs on the Yidu Section including 8.9 billion eggs from four major Chinese carps, both hitting record highs
- Holding 2 breeding and releasing activities which released nearly 700,000 fish fries into the Yangtze River



库区发展 Reservoir area development

- ·实施社会责任项目 58 个,投入捐赠资金 3.4 亿元
- Carrying out 58 projects in social responsibility with an investment amount of RMB 340 million
- · 采购帮扶地区农副产品 880 万元
- Paying RMB 8.8 million to purchase agricultural and sideline products from assisted areas
- ·建设农产品生产车间,打造智慧能源小镇,助力乡村特色 产业发展
- Building production workshops for agricultural products, creating intelligent energy towns and assisting in the development of specialty industries in rural areas
- ·实施帮扶地区公共卫生能力提升等普惠性健康救助项目, 惠及帮扶群众近**2万人次**
- Implementing inclusive health aid projects including the project for improving the ability of public health in assisted areas, which benefited nearly 20,000 people

文化交流 Cultural exchange

- ·在秘鲁当地开展教育资助,组织足球友谊赛,携手路德斯公司举办中秋节社区开放日活动,促进中秘人员友好交流
- Giving education funds to students in Peru, organizing friendly football match and working together with Luz del Sur S.A.A. to hold the Community Open Day in Mid-Autumn Festival so as to promote friendly communication between the Chinese side and the Peruvian side

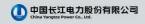
社区管理 Community management

- · 缴纳税费 174.57 亿元
- Paying taxes of RMB 17.457 billion
- · 开展道路维修改造、绿地公园建设等项目,提升社区基础设施的服务功能和质量
- Undertaking projects for repairing and upgrade roads and building green parks to improve service function and quality of infrastructure in the communities

公益慈善 Public benefit & charity

- ·持续开展唇腭裂儿童救助和捐资助学等公益慈善活动,参与公益活动 1000 余人次,与社区建立公开、真诚、和谐的关系,增进民生福祉
- Continuing to hold public benefit and charity events with over 1,000 participants including aids to children with cleft lip and cleft palate, donation to schools, and building an open, honest and harmonious relationship with communities to enhance the well-being of people

2022年



员工发展责任

Responsibility for Employee Growth

长江电力严格遵守《劳动法》《职业病防治法》等法律法规,持续加 强以职代会为主要形式的民主管理,积极推动平等包容、多元化发展, 致力于为员工打造公平、和谐、包容的工作环境。

In strict accordance with relevant laws and regulations including the Labor Law of the People's Republic of China and the Law of the People's Republic of China on the Prevention and Control of Occupational Diseases, CYPC constantly enhanced democratic management which took main shape in the form of workers' congress, took active measures to seek equal, inclusive, and diverse development, and



劳动合同签订率

100%

CYPC invested RMB 14,283,900 in CYPC 100% signed labor contracts with its employees 女性管理者占比

15.97%

Its proportion of female managers was 15.97%

鼓励支持员工深造学习,设置与学历、职称和技能等级相关的人才津贴,共惠及员工

3000余名

员工培训总投入

1428.39 万元

employee training in total

CYPC encouraged employees to pursue further study, and established talent allowances for levels of education, title, and skill, benefiting nearly 3,000 employees in total

荣获"全国五一劳动奖章"

"全国技术能手"

"湖北省五一劳动奖章"

"湖北省技术能手"

2人

 1λ

2 1

2人

CYPC had 2 winners of National May 1 Labor Medal, 1 winner of National Skilled Worker, 2 winners of Hubei May 1 Labor Medal and 2 winners of Hubei Skilled Worker

