

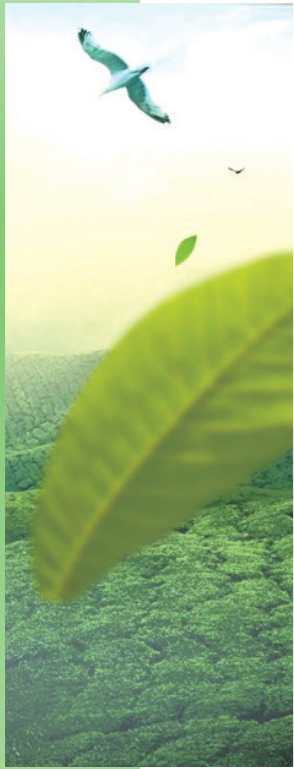


Enjoy life, Enjoy Tangcell



2020 Sustainability Report












Tangshan Sanyou Group Xingda Chemical Fiber Co., Ltd.



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Index of United Nations Sustainable Development Goals (SDG) indicators

SDG Target	Related practice	Page
 1 NO POVERTY	As a state-owned enterprise, poverty alleviation is an important part for Sanyou to fulfill the social responsibilities. Sanyou sets up special poverty alleviation funds to help poor villages at designated points, and there are special personnel stationed in the village to help them.	P41
 3 GOOD HEALTH AND WELL-BEING	Sanyou practice the development concept of circular economy and fully recycle the chemical raw materials and wastes in the industrial system. During the COVID-19 pandemic, Sanyou actively organize prevention and control activities, goes all out to ensure the supply of epidemic prevention materials, and organize public welfare activities such as blood donation.	P13~16, P40, P45
 4 QUALITY EDUCATION	Sanyou actively carry out activities to assist students and creates conditions for on-job education and academic degree promotion for employees	P44-45
 6 CLEAN WATER AND SANITATION	Sanyou extract fresh water and necessary chemicals through seawater desalination project; Continuously optimize the process and reduce the water consumption per ton of product; Implement strict wastewater discharge standards and conduct on-line detection and disclosure.	P14, P22,P26~27
 8 DECENT WORK AND ECONOMIC GROWTH	Invite employees to conduct democratic management and provide employees with a variety of skills training opportunities and promotion opportunities,	P8,P42~44
 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	Sanyou combines viscose fiber production with other industries in the industrial park and realizes the unity of environmental , economic and social benefits under the guidance of circular economy concept	P11~16
 12 RESPONSIBLE CONSUMPTION AND PRODUCTION	Based on the concept of circular economy, Sanyou continuously optimize the production process and realize the closed-loop production of the factory. Launch traceable green products, build a green industrial chain and provide consumers with green products from Tangcell ®.	P22~36
 13 CLIMATE ACTION	Sanyou formally put forward the carbon neutral vision and set up a clear timeline and practice path	P47
 14 LIFE BELOW WATER	Fully recover the chemical components of concentrated seawater in seawater desalination to avoid damage to the marine ecological environment	P14
 15 LIFE ON LAND	Improve the sustainable procurement system of raw materials (pulp), respond to the third-party sustainable development initiative, and actively protect the primeval and endangered forests	P32~33
 17 PARTNERSHIPS FOR THE GOALS	Establish CV and play a leading role in it, carry out extensive stakeholder communication, understand the demands of all parties, and build a sustainable governance model based on multi stakeholder cooperation	P20

1 About this Report



This report, 2020 Sustainability Report of Tangshan Sanyou Group Xingda Chemical Fiber Co., Ltd, is the first sustainability report issued by Tangshan Sanyou Group Xingda Chemical Fiber Co., Ltd. Follow up reports are planned to be released annually.



The disclosure period of this report is from January 1, 2020 to December 31, 2020, covering some historical data.



The organizational scope of this report covers Tangshan Sanyou Group Xingda Chemical Fiber Co., Ltd. and its subsidiary Tangshan Sanyou Group Yuanda Fiber Co., Ltd. Part of the content involves the parent company Tangshan Sanyou Group Co., Ltd. and other subsidiaries. See "About us" for details.



This report is based on the Global Reporting Initiative (GRI) 's Sustainable Development Reporting Standards core program, the United Nations Sustainable Development Goals (SDGs) and China Sustainability Reporting Guidelines for Apparel and Textile Enterprises(2008) (CSR-Gates: 2008) and the Guide on Social Responsibility for Industries in China(GSRI-China 2.0).



The data and information in this report are mainly from the official documents and statistical reports provided by Tangshan Sanyou Group Xingda Chemical Fiber Co., Ltd. and its subsidiaries, and some from Tangshan Sanyou Group Co., Ltd. and other subsidiaries.



The Office for Social Responsibility of CNTAC has verified the inclusiveness, materiality and responsiveness of the report with reference to AA1000 verification standard (2018) type II and the principle of moderate verification.



The Chinese version of the report shall prevail. The Chinese version / English version of the report can be downloaded from the official website of Tangshan Sanyou Group Xingda Chemical Fiber Co., Ltd.
Website: <http://www.ts-sanyou.com.cn>



If you have any suggestions, comments or questions about the report, you may send emails to: syhx002@sanyouhx.com

2 Chairman's Message



郑柏山
Baishan Zheng



In the first year of the "14th Five-Year Plan", Sanyou faced new situations and challenges in the face of COVID-19, China-US trade frictions and cyclical adjustment of the industry under the extremely severe economic situation at home and abroad; In 2021, under the background of the 100th anniversary of the founding of the Communist Party of China, as an important state-owned enterprise in Hebei Province, "common prosperity" has become a new connotation and significance of enterprise management and development; The "Carbon peak, carbon neutral targets" put forward by general secretary Xi Jinping at the seventy-fifth session of the UN General Assembly has put forward new requirements for the medium and long term planning and development of enterprises. In this context, with the support of China Chemical Fibers Association and the Office for Social Responsibility of CNTAC, Sanyou began to comprehensively examine the enterprise's operation and management, energy conservation and emission reduction, technological innovation and brand building from the perspective of sustainable development based on the CV Roadmap formulated by the Collaboration For Sustainable Development of Viscose (CV) , taking the circular economy development concept of Tangshan Sanyou Group as the core to formulate the sustainable development strategy of Sanyou. As the starting point of everything, Sanyou will release the sustainable development report on an annual basis. All stakeholders are welcome to pay more attention to the sustainable development of Sanyou, and also more suggestions and opinions on Sanyou and the sustainable development report are welcomed. To build a low-carbon sustainable textile industry chain, Sanyou will work with its partners to provide solutions derived from Tangcell[®] under the supervision and support of its stakeholders.

3 About us

Company profile

Tangshan Sanyou Group Xingda Chemical Fiber Co., Ltd. is a man-made fiber enterprise engaged in the production of Viscose Staple Fiber, Modal and Lyocell. The Company has been rated as national high-tech enterprise, national technological innovation demonstration enterprise and national cellulose fiber new product R&D base.

The total assets of the company are about RMB 9 billion, covering an area of 1,700 Mu and more than 5,000 employees. The first production line was introduced from Austria. Over the past 20 years, the company has carried forward the enterprise spirit of "Start a business and keep it, and human effort is the decisive factor". Through digestion, absorption and re-innovation, it has successfully built 11 large-scale production lines and three test lines, and the production capacity has been increased from 20,000 tons to 780,000 tons.

Over the years, the company has always adhered to the core values of "principle, responsibility and integrity", continued to focus on customer needs and its own social responsibility, and realized the whole chain and whole process ecological supervision from raw materials to products. A number of products developed by the company have been selected into the "Chinese Fiber Fashion Trend". The products sell well in more than 40 countries and regions in Asia, Africa, Europe, America and Australia, and the annual export volume accounts for more than 40% of the total domestic export volume. It has successively won such honors as "National customer satisfaction products", "National brand cultivation demonstration enterprise", "National advanced enterprise implementing excellent performance model" and "National circular economy demonstration pilot unit".

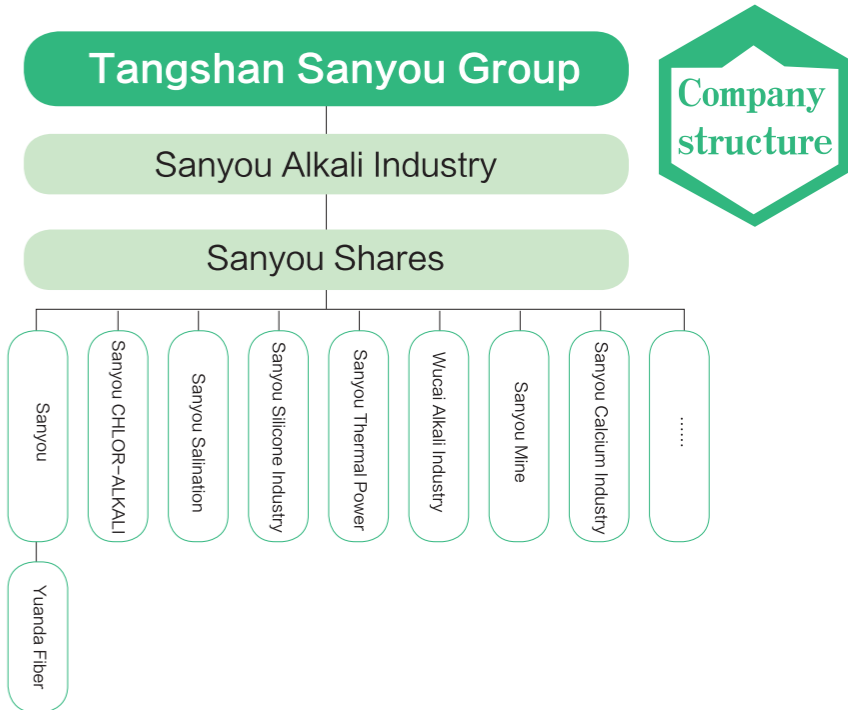


Location of enterprise

Nanpu Development Zone,
Tangshan City, Hebei
Province, China
(Coordinates:
118.22,39.26)

Mission of Sanyou Group

Benefit integration,
beauty creation and
happiness sharing



The related companies involved in the report are referred to as follows:

Enterprise name	Abbreviation
Tangshan Sanyou Group Co., Ltd.	Tangshan Sanyou Group
Tangshan Sanyou Alkali Industry Group Co., Ltd.	Sanyou Alkali Industry
Tangshan Sanyou Chemical Industries Co.,Ltd.	Sanyou Shares
Tangshan Sanyou Group Xingda Chemical Fibre Co., Ltd.	Sanyou or Sanyou Chemical fiber
Tangshan Sanyou CHLOR-ALKALI Co., Ltd.	Sanyou CHLOR-ALKALI
Tangshan Sanyou Salination Co., Ltd.	Sanyou Salination
Tangshan Sanyou Silicone Industry Co., Ltd.	Sanyou Silicone Industry
Tangshan Sanyou Thermal Power Co., Ltd.	Sanyou Thermal Power
Qinghai Wucai Alkali Industry Co., Ltd.	Wucai Alkali Industry
Tangshan Sanyou Mine Co., Ltd.	Sanyou Mine
Tangshan Sanyou Zhida Calcium Industry Co., Ltd.	Sanyou Calcium Industry
Tangshan Sanyou Yuanda Fiber Co., Ltd.	Yuanda Fiber

With the starting point of "creating happiness and beauty together and sharing labor achievements together", Sanyou has unwaveringly implemented the new development concept of innovation, coordination, green, openness and sharing, strengthened the circular economy, enriched the green connotation of products, and provided low-carbon green textile raw materials for the textile industry chain starting from the man-made cellulose fiber "derived from nature and attributed to nature", Contribute to the realization of a harmonious society in which man and nature live in harmony.



Sanyou actively carries out communication and interaction with internal and external stakeholders, listens to the opinions of stakeholders, actively uses the relevant standards, guidelines and guidelines recommended by them, and promotes the continuous improvement of sustainable problems faced by enterprises such as society, environment and economy. As an important part of interaction with stakeholders, Sanyou will issue a sustainable development report every year from this year, so that stakeholders can better understand our current situation of sustainable development and help us make more effective management decisions.

Stakeholders		Economy	Society	Environment	Innovation	Employees	Product
Government agencies	National ministries and commissions	pay taxes	Safety in production	Three wastes discharge	National Service Strategy	Employee employment	Product safety
	Local government	Preservation and appreciation of state-owned assets	Industrial poverty alleviation	Daily monitoring			
Intra-enterprise	Surrounding communities			Odor control			
	Affiliated companies	Profitability	Public opinion environment	Work environment	Circular economy	Promotion mechanism	
	Investor	Information disclosure			Sustainable development capability	Labor security	
	Staff	Salary			Innovative technology development	Cultivation mechanism	
Downstream customers	Yarn and fabric				Innovative services		Product quality
	Terminal clothing brand	Terms of payment	Compliance	Chemicals management	Transparent supply chain		Traceability
	Non-woven fabric industry chain	Pricing mechanism		Green supply chain	Customized products		After-sale service
		Delivery date					Delivery date
Supplier							Degradability
	Pulp	Terms of payment	Policy orientation	Source of raw materials	Innovative pulp source		
	Chemicals	Pricing mechanism		Compliance management	High quality raw material supply		Delivery date / Source
		Delivery date					
Other stakeholders	Other man-made cellulose fiber manufacturers	Compliance competition		Environmental Exchange	Joint development		
				Target and path	Patent protection		
	Trade Association	Healthy development of the industry	Compliance publicity	Carbon neutral vision	Innovative technology promotion		Optimize product structure
		Supply-side reform	Safety production	Three wastes discharge			
	CV NGOs			Climate change			
	Standardization Organization			Biodiversity conservation	Supply chain transparency and traceability		Product degradability
	Third party organization			Energy management			
				Water resources management			
				Environmental management			
	Universities research institutes				Innovative technology research (raw material source, production process, differentiated products)		



Economic data disclosed in the annual reports of listed companies



Chapter I Regional integrated circular economy system

- I. Tangshan Sanyou Group
- II. Circular economy -- closed-loop production based on industrial park

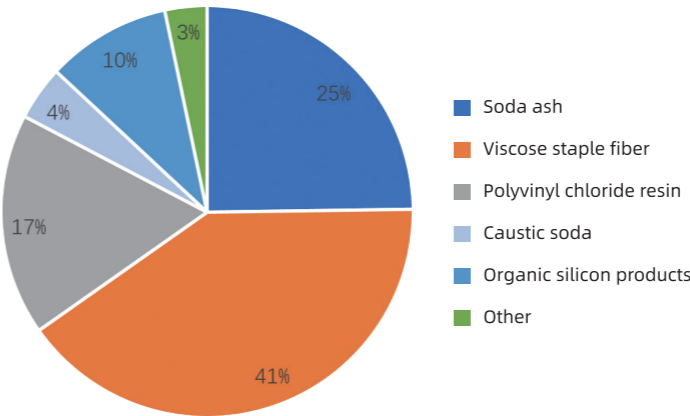


Introduction

After more than 20 years of development, relying on the four main businesses of chemical fiber, soda ash, chlor alkali and organic silicon and the supporting business systems of thermal power, raw salt, alkali stone, logistics and international trade, Tangshan Sanyou group has formed a regional circular economy system, reduced the environmental impact of the whole industrial system to the greatest extent, and realized the unity of environmental benefits, social benefits and economic benefits. It has embarked on a unique road of green, circular and low-carbon development. Among them, the annual operating revenue of Sanyou Chemical Fiber reaches more than 40% of the total operating revenue of Sanyou Shares, which is the largest plate of the group and the core node to realize circular economy.

Tangshan Sanyou Group

Sanyou Chemical Fiber is subordinate to Tangshan Sanyou Group. Based in Tangshan, Hebei Province, China, Tangshan Sanyou Group has gradually grown from a single soda ash enterprise at the beginning of its establishment to a leading enterprise with four main businesses: chemical fiber, soda ash, chlor alkali and organic silicon. At present, Tangshan Sanyou group's products involve 9 categories and more than 140 varieties, mainly including 3.4 million tons of soda ash, 780,000 tons of viscose staple fiber, 530,000 tons of caustic soda, 505,000 tons of PVC and 200,000 tons of organic silicon monomer. Among them, soda ash and viscose staple fiber have both won Chinese famous brands, and Sanyou® trademark is "China well-known trademark". The products are exported to more than 120 countries and regions in Asia, Africa, Europe, Americas and Australia. The total assets of the company are RMB 24.3 billion, the annual sales revenue is RMB 17.8 billion, and nearly 20,000 employees.



Distribution of operating income of Sanyou in 2020

Product	Capacity (thousand tons)
Soda ash	3400
Viscose staple fiber	780
Polyvinyl chloride resin	505
Caustic soda	530
Organic silicon monomer	200

² 唐山三友化工股份有限公司 2020 年度社会责任报告

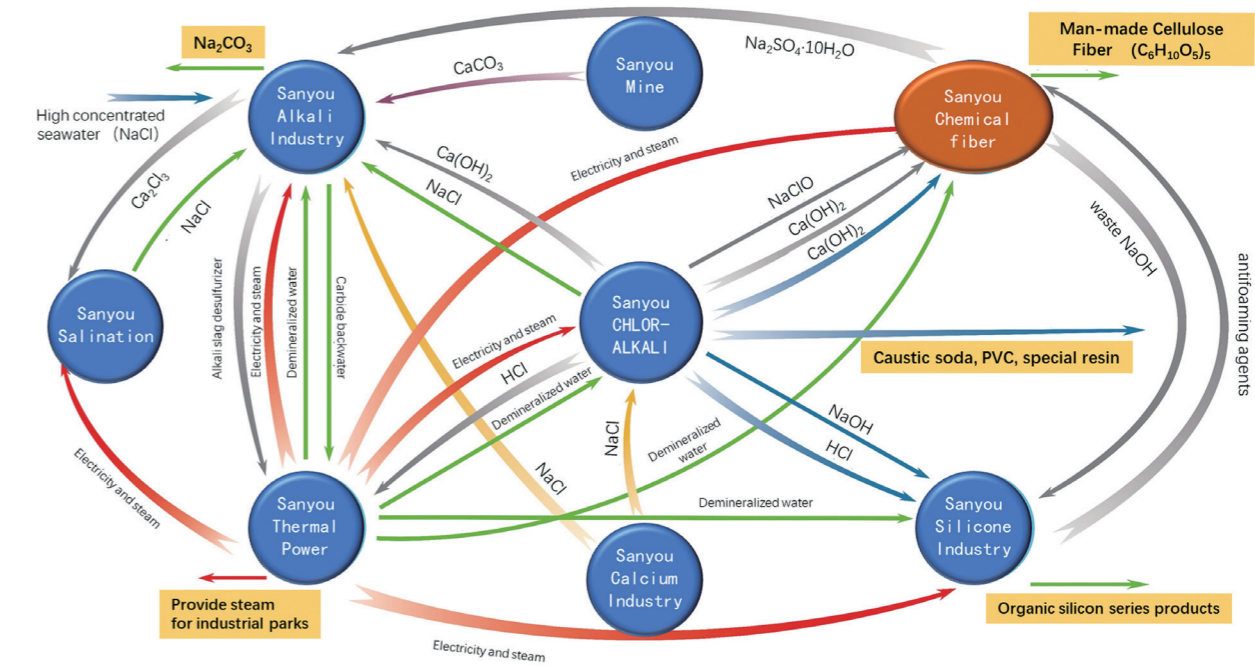


Circular economy

-- closed-loop production based on industrial park

From salt to soda ash, Viscose Stable fiber, chlor alkali and organic silicon, Tangshan Sanyou group organically connects the textile industry chain with the upstream chemical industry chain through the global original circular economy development model of "two alkalis and one fiber", and realizes the regional circular economy by organically combining multiple industrial categories with resources, produced products and produced wastes, Multiple industrial chains are intertwined to minimize the environmental impact of the whole system, realize the unity of environmental benefits, social benefits and economic benefits, and walk out of a unique green, circular and low-carbon development road.

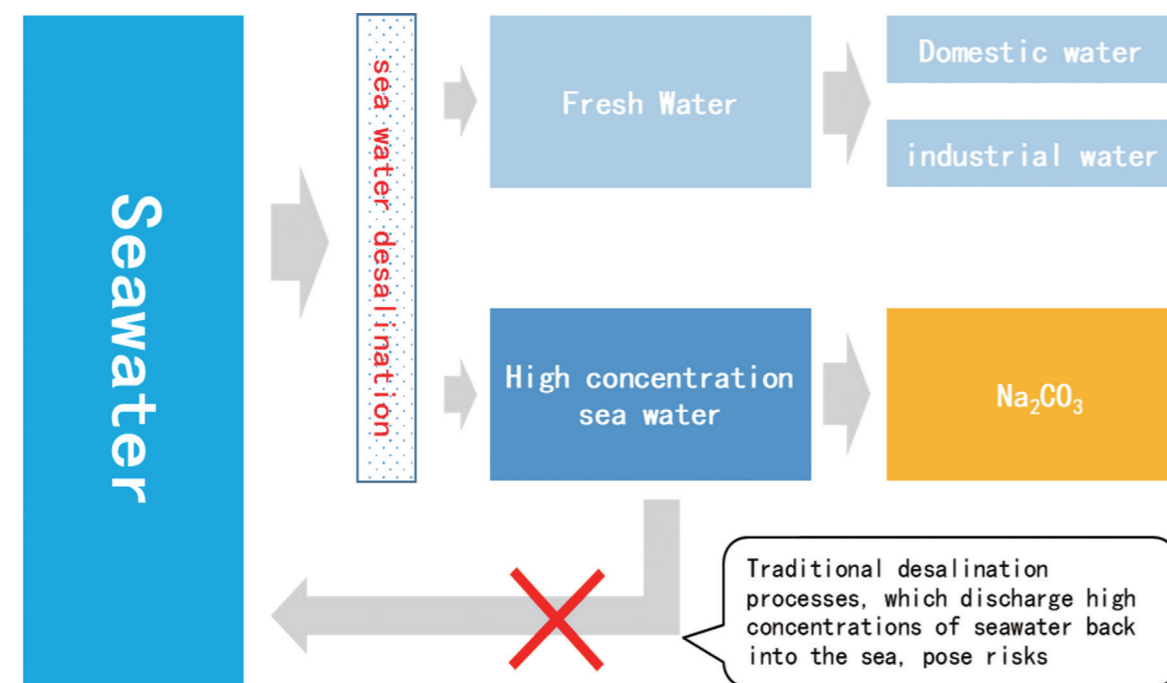
The annual operating income of Sanyou chemical fiber reaches more than 40% of the total operating income of Sanyou shares. It is not only the largest plate of the group, but also an important link in the transition of Sanyou group from upstream chemicals to consumer goods. Naturally, it has become the core node of the circular economy system of Tangshan Sanyou group. Therefore, in the process of promoting sustainable development, Sanyou chemical fiber is not limited to pursuing the minimum environmental impact of the factory, but uses its own industrial network advantages to creatively take the by-products or wastes produced by one enterprise as the raw materials of another enterprise, realize the closed-loop utilization of materials and multi-level utilization of energy, and create a circular economy system of collaborative innovation of multiple industrial chains.



Circular economy diagram of Tangshan Sanyou Group

1. Seawater desalination -- the starting point of circular economy

Seawater desalination project is an important project of Caofeidian national circular economy pilot industrial park where Tangshan Sanyou group is located, which is of great significance to ensure the stability of fresh water resources required for the development of the park. However, while seawater desalination produces fresh water, it also produces a large amount of concentrated seawater with extremely high salinity. If directly discharged into the sea, it will endanger the ecology. Sanyou group pioneered a new process in which concentrated seawater is directly used for soda ash production in China. The concentrated seawater after seawater desalination is used as raw material to produce soda ash, which effectively solves the pollution problem of concentrated seawater discharged into the sea after seawater desalination, and has also become the starting point for Tangshan Sanyou group to build a circular economy system.



2. Industrial cycle of chlor alkali (NaOH)

NaOH, as the second largest cost factor in viscose fiber industry except pulp, plays an important role in the viscose fiber industry. Sanyou chlor alkali is close to Sanyou chemical fiber plant. More than 85% of the NaOH produced by the company is directly used in the production of viscose staple fiber through pipeline transportation. This eliminates the need to build NaOH storage tank farm in the chemical fiber plant, reduces the risk of leakage and minimizes the carbon emission generated during chemical transportation.

In addition, chlorine and hydrogen produced in the production process of Sanyou chlor alkali plant are synthesized into hydrogen chloride for the production of polyvinyl chloride (PVC), special resin and Organic silicon monomer of silicon industry company; The waste calcium carbide slag slurry of the factory is used for soda ash production and replaces CaCO_3 for sewage treatment of viscose factory.

⁴ 详见第二章第三节



3. Technological innovation in energy supply

The steam and electricity necessary for Sanyou chemical fiber production depend on the thermal power plant of Sanyou group. The thermal power plant also undertakes the heating task of civil and industrial parks in Nanpu development zone. Thermal power plant is the focus of the group's carbon emission and the key part of the group's realization of green circular economy. At present, the boiler of the thermal power plant implements the ultra-clean emission requirement.⁵ Sanyou Group continues to optimize the process and improve the energy efficiency. It has carried out the transformation of frequency converter, the heating technology of circulating water with low vacuum operation and the heat pump heating technology of absorbing the waste heat of soda. At the same time, the thermal power plant uses the alkali residue of soda ash company as the desulfurizer instead of the traditional limestone desulfurization method to turn waste into treasure.

4. Recycling of Na_2SO_4

Although sulfate ions (SO_4^{2-}) in viscose fiber wastewater are not generally regarded as pollutants, it has attracted more and more attention by stakeholders in recent years. In viscose production process, sulfate generally exists in the form of mirabilite ($\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$) or sodium sulfate (Na_2SO_4), which is extracted by flash crystallization / one-step efficiency extraction technology to reduce the content of wastewater.

⁵ Its index is equivalent to the emission standard of natural gas boiler

排放限值要求



Relying on the group's circular economy system, Sanyou Chemical Fiber transmits the by-product Na_2SO_4 solution of fiber production to soda ash company through pipeline for removing Ca^{2+} in high concentration sea water. This circular economy model, on the one hand, realizes the closed-loop high-value utilization of Na_2SO_4 and reduces the soda consumption. On the other hand, Na_2SO_4 no longer needs to crystallize to solid state, reduces the steam / power consumption in the whole process and reduces the carbon emission of the whole system. According to the calculation of the most advanced one-step nitrate extraction device used by enterprises at present, about 32KW power and 330kg steam are saved per ton of viscose.



5.Internal circulation of bleach (NaClO)

Sodium hypochlorite (NaClO) has strong oxidation and is a common bleaching agent in papermaking, textile, pharmaceutical and other fields. The product is corrosive and needs to be transported by a special vehicle as dangerous chemicals during transportation. Relying on the circular economy system, Sanyou Chemical Fiber innovated and adjusted the PVC production process to make sodium hypochlorite solution as a by-product in the process flow. It is directly transported to the fiber plant through pipeline, which reduces the potential transportation risk during product transportation and further reduces the carbon emission during transportation.

6. Self-sufficiency of defoamer

In the process of producing functional viscose fibers (including modal), special processes and additives are needed. In this process, defoamer should be used to prevent foam formation from affecting product quality and stability of production system. Relying on the second circular economy industrial chain of Sanyou group built by silicon industry, Tangshan Sanyou takes organic silicon monomer as the leading factor and extends to the downstream high added value to produce defoamer for Sanyou Chemical Fiber. At the same time, the waste alkali liquid generated in viscose production can also be used in organic silicon hydrolysis workshop to neutralize the acidic components in the product.



Green Development based on Best Available Technology

- I. Man-made Cellulose Fiber
- II. Collaboration for Sustainable Development of Viscose (CV)
- III. Disclosure of core data



Introduction

Sanyou has been adhering to the path of green and sustainable development for many years, and as the initiator advocating the establishment of Collaboration for Sustainable Development of Viscose(CV), it serves as the chairman unit to actively respond to the demands of the stakeholders, meet the requirements of the related guidelines/standards, be equipped with advanced energy-saving and emission-reduction equipment in the industry, and minimize the environmental impact of the enterprise by relying on the circular economy system of the group and the industrial parks.

Man-made Cellulose Fiber

The raw materials of Man-made Cellulose Fiber come from natural cellulose such as cotton, wood, bamboo, linen, etc. The fiber products are made by procedures of processing, treatment, and spinning, and can be subdivided into viscose fiber (Including Modal), lyocell , cellulose acetate fiber, cuprammonuium , etc., based on different processing technics. Man-made Cellulose Fibers are widely used in the fields such as clothing, home textiles, and industries relying on fibers’ unique characteristics, come from nature and reture to nature. As one of the leading enterprises in respect of man-made cellulose fibers in China, Sanyou has been adhering to the enterprise spirit of “Human effort is the decisive factor in pioneering and sustaining an enterprise.” , and continuously improving its competitive strengthen through in-taking, digestion, and re-innovation since its establishment in 1998. Viscose, as the largest yield of man-made cellulose fiber product, the sustainable management of the production process of viscose staple fibers attracts the great attention of stakeholders. Sanyou has the production capacity of viscose staple fibers of 780,000 tons, accounting for about 14% of the global total production capacity. This chapter is mainly the introduction of the innovative technology of viscose staple fibers produced by the Company.

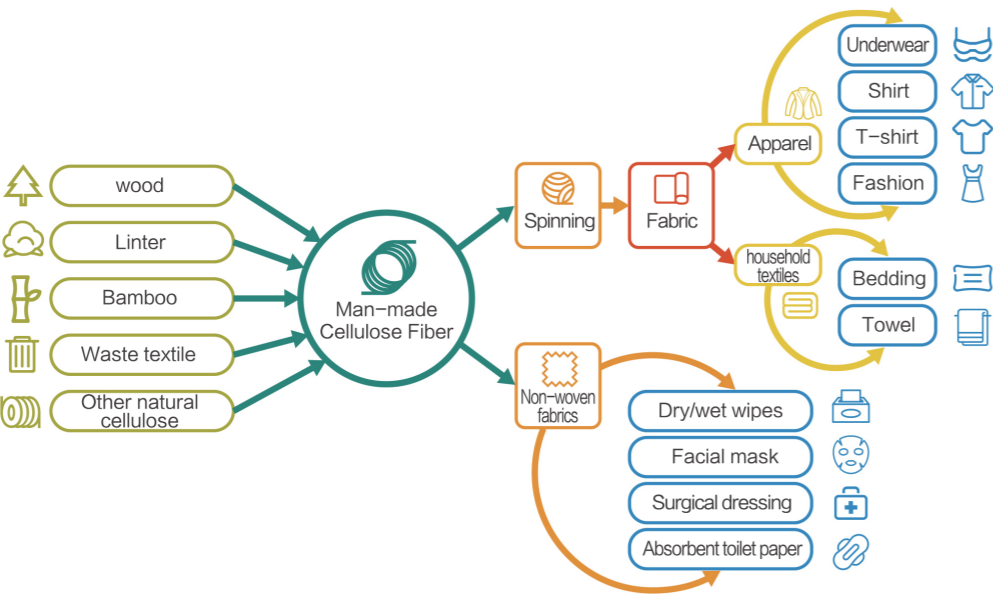


Figure: Schematic Diagram of Man-made Cellulose Fiber Industry Chain

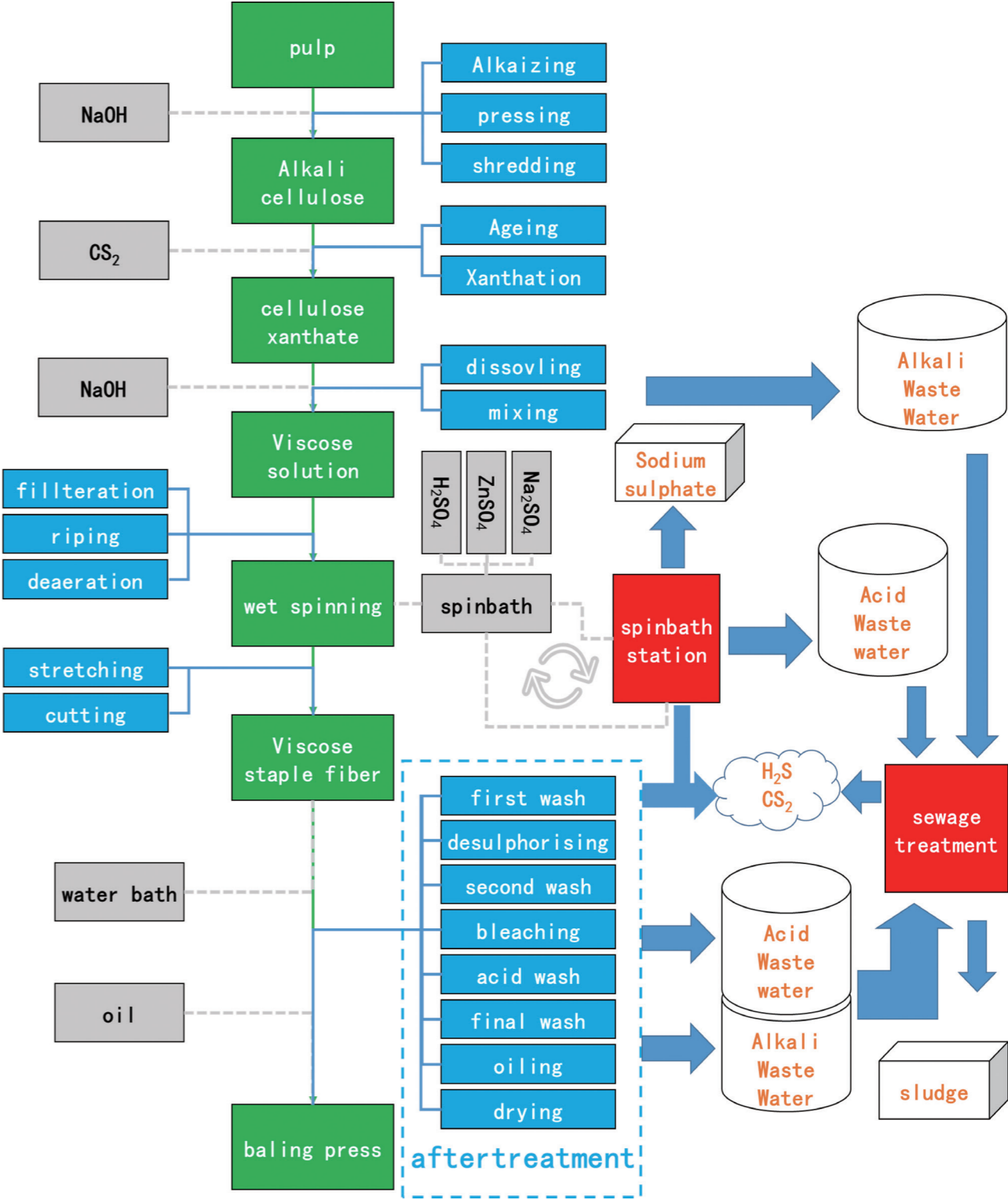


Figure: Production process of viscose staple fiber

Collaboration for Sustainable Development of Viscose (CV)⁷

In order to explore the sustainable development path of the viscose industry, respond to the concerns and needs of various stakeholders for the sustainable development of the industry, and promote multi-stakeholder cooperation and co-governance, in 2018, as one of the initiators, Sanyou jointly established the Collaboration for Sustainable Development of Viscose (CV) with a number of viscose enterprises and industry associations, and serves as the chairman unit. At the beginning of the establishment of CV, it determined vision, namely, establishing a public governance platform for green development for mutual supervision and promotion among industries based on the industrial reality, and exploring a sustainable development model with strong applicability and operability to minimize the environmental and social impacts of viscose products in the full life cycle. With the purpose of assessment of the performance of key sustainable development issues in enterprises, CV has arranged 240 standards in respect of sustainable development in more than 80 fields in more than 180 countries around the world, comprehensively evaluated the applicability, quantifiability, operability, objectivity and perspectiveness of each standard to the industry with reference to the opinions and recognition of key stakeholders (brands, government departments, third-party organizations, etc.), and screened the most applicable standards for the core performance assessment of sustainable development in enterprises, so as to form a comprehensive standard system—CV Roadmap, as a tool for the Collaboration to evaluate the performance of sustainable development in enterprises. From 2018 to 2020, Sanyou earnestly implemented the CV Roadmap to promote energy-saving and environmental protection project such as the air-exhausting and biochemical governance in sewage plants, aerated biological processing in Yuanda Fiber sewage plant, with a total of RMB 570 million of environmental protection funds, thereby realizing the overall improvement of sustainable development performance.



Technical Standards		Evaluation Subject		Basic Requirements		Advanced Requirements	
		Facility	Product	(2018. 1–2019. 6)		(2019. 7–2020. 12)	
Raw Material	PEFC or FSC	✓	✓	Source FSC® or PEFC™ certified pulp		Purchase FSC® or PEFC™ certified pulps, and take proactive management measures to reduce the risk of using wood products from High Conservation Value (HCV) or High Carbon Stock (HCS) forests	
	Pulp purchased from legal sources and with legitimate permits	✓	✓	Pass the FSC® or PEFC™ Chain-of-Custody (CoC) audit for manufacturing facility		Pass the FSC® or PEFC™ Chain-of-Custody (CoC) audit for manufacturing facility	
	Viscose Fiber Industry Rules (2017)	✓	✓	Legal compliance		Legal compliance	
	Cleaner Production Assessment Standard for Man-made Cellulosic Fibers (Viscose) Manufacturing	✓	✓	Full compliance		Full compliance	
Manufacturing	Ø ZDHC	✓	✓	Achieve domestic basic level		Achieve domestic advanced, or international advanced level	
	Wastewater discharges shall meet the foundational limits for conventional parameters under the ZDHC Wastewater Guidelines	✓	✓	Wastewater discharges shall meet the foundational limits for conventional parameters and the reporting limits for MRSL parameters, while wastewater treatment sludge shall meet sludge-related requirements		Wastewater discharges shall meet the foundational limits for conventional parameters and the reporting limits for MRSL parameters, while wastewater treatment sludge shall meet sludge-related requirements	
	OEKO-TEX® STeP	✓	✓	Obtain the STeP by OEKO-TEX® certification scoring at Level 1 or above		Option 1: Obtain the STeP by OEKO-TEX® certification, scoring Level 2 or above; Option 2: Develop improvement goals based on the Higg FEM 3.0 self assessment, and pass the third-party verification audit to confirm meeting the goals within 36 months of joining CV. Additionally, pass the SA8000® or BSCI audit	
	Higg Index	✓	✓	Complete a Higg FEM 3.0 self assessment		Note: Options 1 and 2 are alternative choices for members; only one option is required to be completed.	
Product	BSCI	✓	✓	—		—	
	OEKO-TEX® STANDARD 100	✓	✓	Obtain certification		Obtain certification	
GB/T 14463 Viscose staple fiber		✓	✓	Conformance to standards		Conformance to standards	

⁷<http://www.cvroadmap.com>

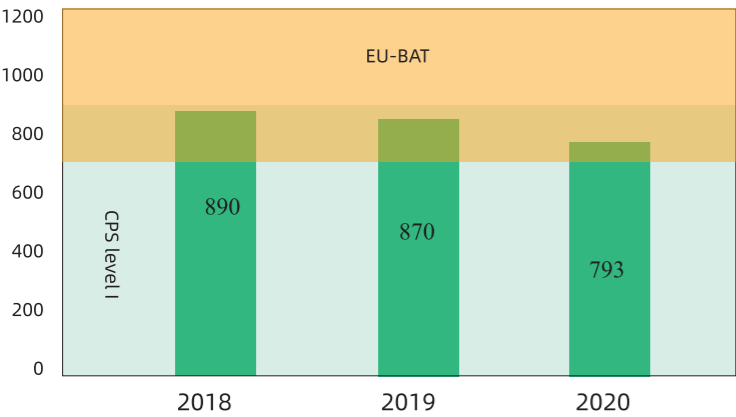
Disclosure of core data

Core performance indicators

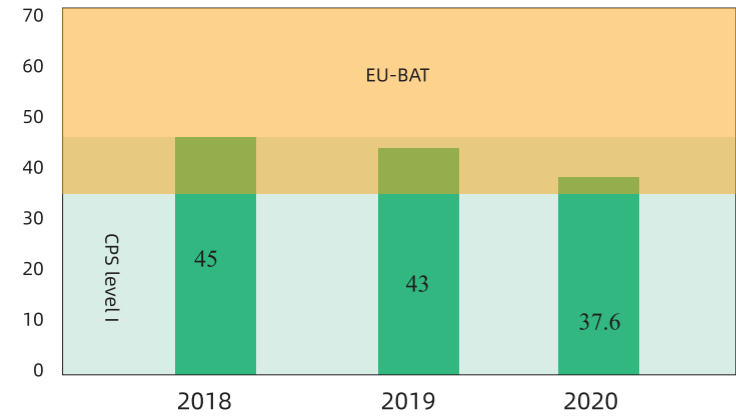
Item	Item	Quantity
Labor	Total number of employees	5338
	Number of male employees	3689
	Number of female employees	1649
	Number of employees aged 18-45	5072
	Number of employees aged over 45	266
	Signing rate of labor contracts	100%
	Employee insurance coverage.	100%
	Total amount of social insurance paid (RMB1,000)	161130.9
Environmental protection	Annual investment of environmental protection funds (RMB1,000)	342744.4
	Total annual operating cost of waste gas equipment (RMB1,000)	244961.7
	Total annual operating cost of waste water equipment (RMB1,000)	41198.5
	Annual cost of solid waste treatment (RMB1,000)	1882.8
Products	Annual output of viscose staple fibers (1,000 tons)	743.4
	Total annual sales (RMB1 billion)	7
	Including Tangcell (tons)	50174
Production	Comprehensive energy consumption per ton of product (kgce/t)	793
	Including electricity consumption per ton of product (KWh/t)	882.6
	Including steam consumption per ton of product (kgce/t)	6.05
	Total annual water consumption of enterprises (1 million m3)	27.95
	Water consumption per ton of product (m3/t)	37.6
	Reuse rate of industrial water (%)	95
	Total sulfur recovery rate (%)	96.5
	Recovery rate of sodium sulfate per ton of product	61
	Comprehensive utilization rate of waste silk and waste materials (%)	100

As the chairman of CV, Sanyou meets the requirements of the domestic and foreign advanced standard system⁸ with reference to the requirements CV Roadmap 2025 to continuously improve the level of cleaner production in viscose production and promote the closed-loop production of the industry.⁸

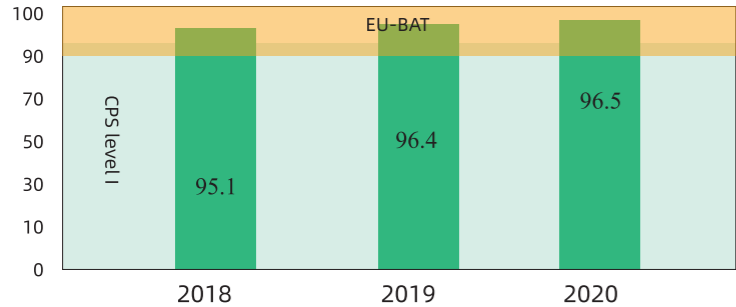
Energy consumption kgce/t



Water consumption m³/t



Total sulfur recovery rate (%)



⁸Chinese Clean Production Standard, EU-BAT, Roadmap towards responsible viscose and modal fibre manufacturing by Changing Markets Function, ZDHC MMCF Interim Wastewater Guidelines, STeP by OEKO-TEX, etc

Special Column: Third-Party Certification

EU-BAT

Data Comparison	Unit	Modal	EU BAT
Energy Intensity	GU/MT*	✓	20-30
Pulp Use	MT/MT†	✓	1.035-1.065
*H ₂ SO ₄	MT/MT†	✓	0.6-1.0
*NaOH	MT/MT†	✓	0.4-0.6
Cl ₂	kg/MT†	✓	80-100
COD Load**	kg COD/TF	✓	3-5
*Zn	kg/MT†	✓	2-10
Process Water	M³/MT†	✓	35-70
S to Air	kg/MT†	✓	12-20

OEKO-STeP

	Level 1	Level 2	Level 3
SCORING RESULT STeP			LEVEL 3
CHEMICAL MANAGEMENT			
ENVIRONMENTAL PERFORMANCE			
ENVIRONMENTAL MANAGEMENT			
SOCIAL RESPONSIBILITY			
QUALITY MANAGEMENT			
SAFETY			
DETOX TO ZERO PERFORMANCE			
WASTEWATER AND SLUDGE			
MRSL			

Data Disclosure—Pollutant Release and Transfer Register (PRTR)⁹



Pollutant Release and Transfer Register (PRTR) refers to a pollutant inventory or environmental database used to record the process that the harmful chemical substances that are released to atmosphere, water, and soil are transferred to other places for processing or treatment. Sanyou has published the annual PRTR data on the IPE platform since 2019, and finished the submission of 2020 PRTR data in 2021 ahead of its peers. Stakeholders can comprehensively know about Sanyou's environmental performance through the data publicly disclosed by third parties. Institute of Public & Environmental Affairs (IPE) works on collecting, arranging, and analyzing the environmental data released by governments and enterprises. In 2013, IPE established the voluntary release platform for PRTR information, aiming to promote the production enterprises with high environmental impacts to disclose the annual resource and energy consumption, the total annual discharge and release of waste water and exhaust gas pollutants (including harmful chemicals), and the annual production and transfer of hazardous wastes.

⁹<http://www.ipe.org.cn/IndustryRecord/Regulatory-record.aspx?companyId=148634&dataType=0&isyh=0&showtype=0>

Cases of energy saving and emission reduction

1.Exhaust gas governance

CS₂ is an essential chemical in the viscose production process, but the sulfur-containing waste gas (CS₂, H₂S) generated from CS₂ involvement in the chemical reaction is the key environmental governance issue that viscose fiber enterprises pay much attention to.

Sanyou adheres to the principle of the circular economy when handling the issue of sulfur-containing waste gas. By four-level processing technology for sulfur-containing waste gas, the CS_2 in waste gas is recovered to the maximum extent for reproduction, and the rest of the sulfur-containing waste gas is treated through conversion to other sulfides and harmless treatment.

1)CS₂ Condensing recovery device

In the process of spinning forming of viscose solution, CS_2 will escape from the solvent system into a gaseous state. Viscose enterprises generally use the method of condensing recovery to conduct preliminary recovery treatment of high-concentration CS_2 due to the boiling point of CS_2 under atmospheric pressure is $46.3^\circ C$. Sanyou has realized that 100% of the equipment in the plant is equipped with two-stage tubular condensers, and the recovery rate of CS_2 is about 35% by condensation with circulating water.

CS₂ recovered per hour 9898kg/h

CS₂ recovery > 35%



2) H₂S removed by Alkali spraying

In order to realize effective recycling utilization of CS₂ in waste gas, it is necessary to separate H₂S from CS₂. Sanyou uses alkali spraying devices to step spraying treatment of waste gas with dilute alkali liquor. The sodium hydrosulfide solution produced from the reaction of H₂S with NaOH is evaporated and tableted by a rotatory evaporator, which is then sold.

H₂S Inlet concentration 1000-3000mg/m³

H₂S Outlet concentration 20-60mg/m³

H₂S treatment ratio: > 98%

3) Activated carbon adsorption recovery

The technology of activated carbon adsorption is the most proven and effective technology for CS₂ capture at present. CS₂ waste gas with low concentration with hydrogen sulfide removed is absorbed through activated carbon layers; after the absorption is saturated, CS₂ is distilled out by steam, condensed and collected for re-use in production; the activated carbon is recycled after drying and cooling.

Removal rate of activated carbon absorption: > 95%

Carbon disulfide recovery per ton of product: > 120kg/t

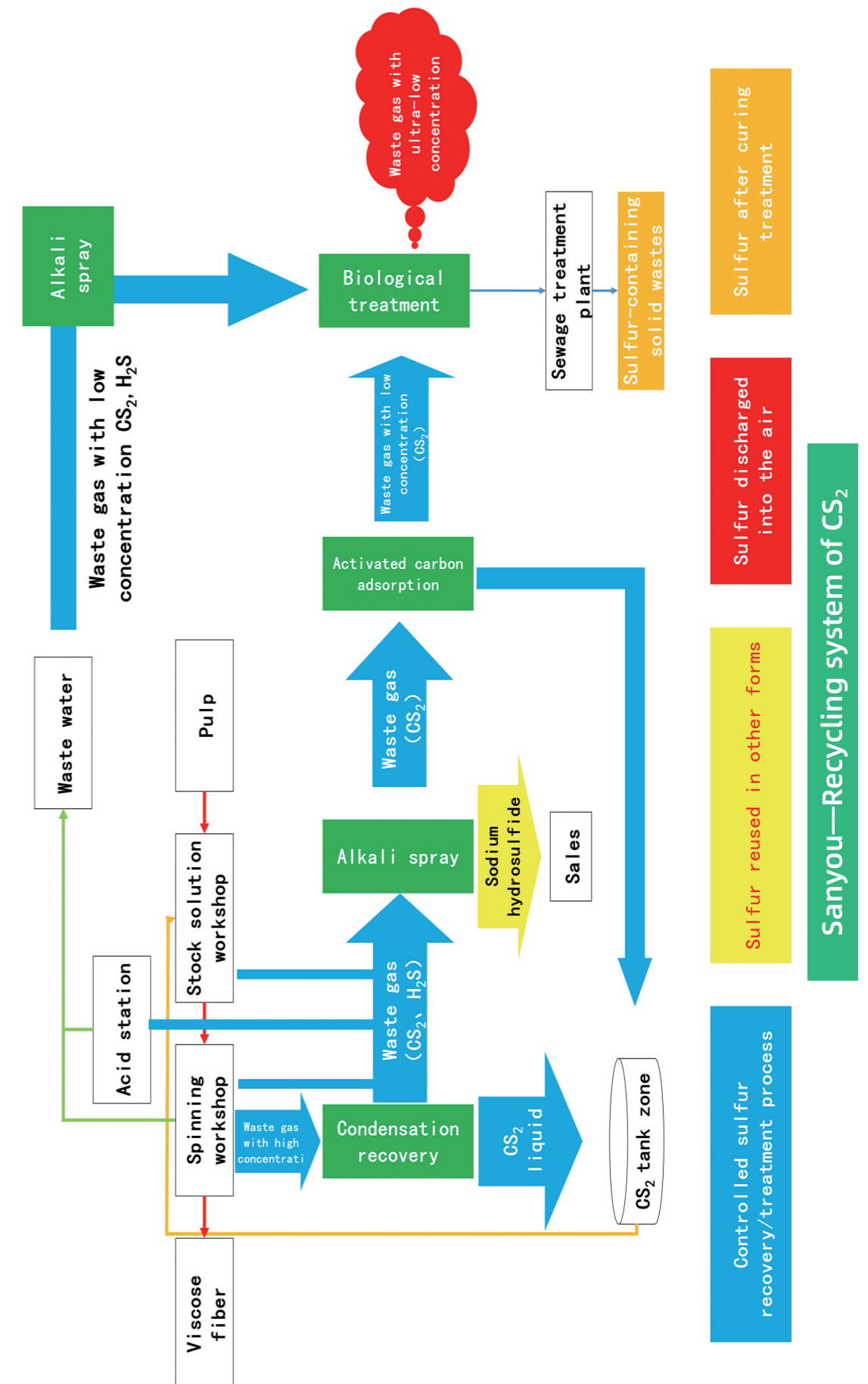
Recycling times of activated carbon: 4800-5000 times



4) Biological method-based waste gas treatment device

Since 2015, Sanyou, together with its cooperative partners, has carried out joint scientific and technology research on the treatment technology of waste gas with ultra-low concentration. The technical verification was completed in 2018, and the technology was put into operation in 2019. This technology uses microorganisms to treat low-concentration sulfur-containing waste gas. The mixed gas of low-concentration carbon disulfide and hydrogen sulfide is converted into sulfuric acid after being treated with biological bacteria, which is then reused in the production system after further treatment.

Sanyou currently has built four sets of biological method-based waste gas treatment devices, with a total air volume of 296,000m³/h, which can effectively meet the waste gas treatment demand for 780,000 tons of viscose staple fiber production in the plant. With respect to the devices, the removal rate of H₂S reaches above 95%, and the removal rate of CS₂ tail gas reaches above 90%.



2.Sewage treatment

In order to improve the waste water treatment level in enterprises and maximize the promotion of source governance and resource recycling, Sanyou has invested RMB70 million to build biochemical treatment facilities in sewage treatment stations during the 13th Five-Year Plan period. By screening and domesticating special bacteria resistant to high acid and high salt environment, and improving the existing waste water treatment process, the biochemical treatment of waste water is realized; the treated waste water can be efficiently recycled to the production system by advanced oxidation and negative pressure degassing filtration technology, which can not only improve the waste water treatment technology level in the industry but also fulfill the Group's circular economy concept.

At present, the establishment of the Company's waste water treatment units includes aerobic biochemical pools, secondary sedimentation tanks, water collection tanks, pump rooms, decalcifying pools, outer drainage mixing tanks, supporting blower rooms, switching rooms, chemical feed rooms, COD online monitoring station building, etc. Next, Sanyou will continue to promote the research of reclaimed water recycling, so as to further improve the efficiency of water recycling and further reduce sewage discharge.

1)Environmental information disclosure

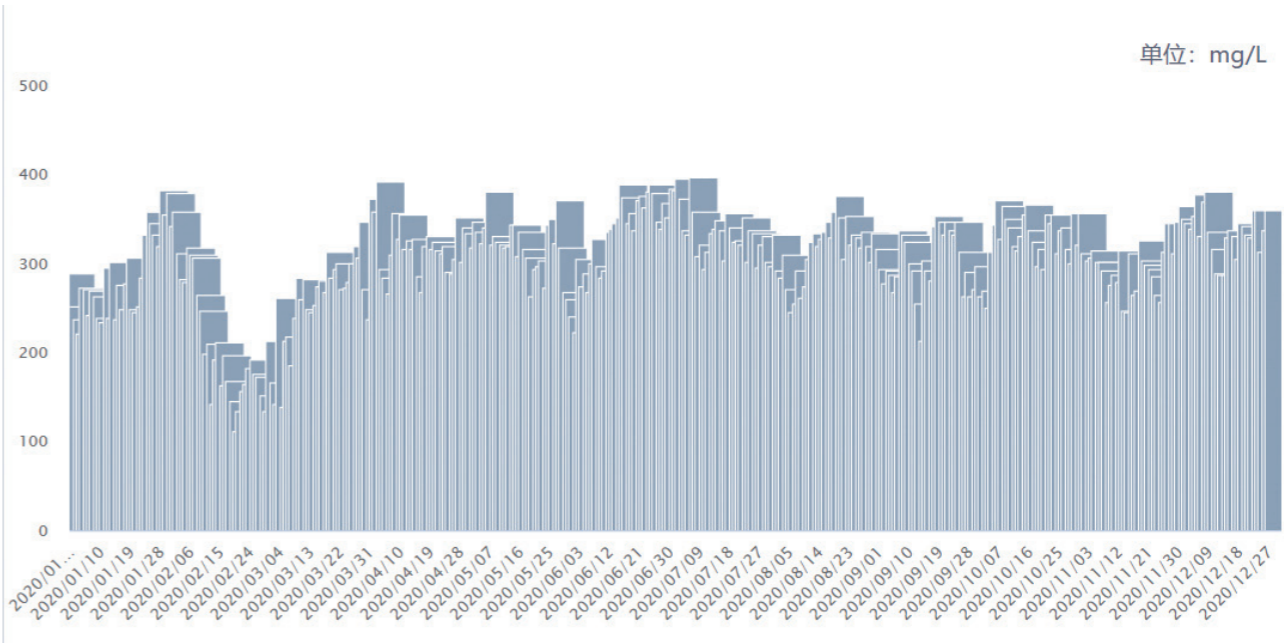
The Real-time data of Sanyou's automatic water quality detection system is displayed on the special electronic screen for publicity outside the plant.

Sanyou's waste water discharge data has been uploaded to the Internet in real time. The relevant data can be queried on the Automatic Monitoring System for Pollutant Sources of Hebei Province¹¹or IPE website¹²



¹¹<http://111.62.218.180:9051/loginPublic>

¹²<http://www.ipe.org.cn/IndustryRecord/Regulatory-record.aspx?companyId=148634&dataType=0&isyh=0&showtype=0>



Online detection data of waste water (COD) discharge¹³

2)Treatment of sulfur-containing waste gas

The sulfur-containing waste gas generated during production is partially dissolved in waste water and finally precipitated and diffused into the air during sewage treatment. Based on this principle, Sanyou has been carrying out the renovation project of the sewage treatment tank since 2018. The main sections of the sewage treatment tank were subject to capping, including installing anti-hanging membrane structures in the two primary settling tanks of the biochemical section, and installing cover plates with fiber glass-reinforced plastics in other concentration tanks, mixer-agitator tanks, mud collection tanks, mixing water tanks and outer drainage tanks. The sulfur-containing waste gas generated in the wastewater treatment system will be piped into the alkali spray system for treatment.



¹³The waste water of Tangshan Sanyou Group Xingda Chemical Fiber Co., Ltd. is discharged to the third-party sewage treatment plant designated by the government for further treatment, and the discharge standard is ≤ 500

3.Comprehensive innovative technology

1) Sugar production technology with hemicellulose

In dissolving pulp, apart from α cellulose which is an effective component generated in the production process of viscose , there are also some “impurities” such as hemicellulose. In the traditional process, such “impurities” are the main source of COD in waste water. In order to realize the recycling of these organic substances, Sanyou independently develops a method for producing xylitol with hemicellulose as the raw material. After the waste liquid containing hemicellulose is collected and treated, it is subject to cleavage reaction under the catalysis of sulfuric acid and then combined with water to form pentose, which is finally made into syrup products and sold to cooperative food processing enterprises for further processing into xylitol products.

2020 Syrup yield: 14,290T
Syrup concentration: 55-60%
COD emission reduction 11kg/t



2)Multi-effect flashing technology

NaOH and H₂SO₄ are needed in the production process of viscose fibers, which are finally converted into Na₂SO₄ in waste water and discharged. In order to reduce Na₂SO₄ content in waste water, the Company cooperates with its partners to jointly research and develop one-step nitrate extraction technology, i.e. directly producing sodium sulfate by acid bath evaporating device. The one-step nitrate extraction technology is more energy-saving and effective than traditional evaporation and crystallization processes. At present, the 25% production of the viscose production capacity generates by-product (Na₂SO₄·10H₂O) solution and then transports it directly to sodium carbonate companies, realizing the recycling of Na₂SO₄¹⁴; At present, 25% Na₂SO₄ are transported to sodium carbonate companies, realizing the recycling of Na₂SO₄¹⁴; another 75% are equipped with one-step nitrate extraction devices for efficient recovery of Na₂SO₄, which is then made into sodium sulfate and sold. The overall Na₂SO₄ of Sanyou reaches 61%.



3)Step steam utilization technology

Steam is the main energy source of viscose fiber enterprises, and its uses include heating, humidification, power generation, equipment driving, etc. The thermal power plant of Sanyou Group provides superheated steam of 0.8Mpa and 275 ° C, which is transported to Sanyou Group Xingda Chemical Fiber for use through pipes. Due to the different steam pressure and temperature required by each section, it is necessary to reduce the temperature and pressure before the steam is used. Given that the using pressure of the flashing section and the drying section is only 0.2MPa, adjustment by secondary temperature and pressure reduction and cylinder separation is additionally needed, resulting in a large amount of waste of internal steam energy. With the purpose of minimizing energy consumption Sanyou implements steam cascade utilization technology to achieve effective utilization of energy



¹³ 详见第二章第二节

4) Technology of adjusting sewage’s PH value with acetylene sludge slurry

H₂SO₄ is needed in the production process of viscose , which leads to weak acidity of waste water before it enters sewage treatment facilities. The adjustment of the PH value of waste water facilitates the effective treatment of relevant components in waste water. The viscose plant needs to use weak alkaline substances, generally CaCO₃, to neutralize waste water. Different from the traditional process, Sanyou takes the advantage of the Group’s circular economy to use the wasted substance—acetylene sludge slurry (Ca(OH)₂) from sodium carbonate plants to adjust the PH value of acidic waste water. Compared with CaCO₃, acetylene sludge can have a quick reaction with the acid in waste water with the advantages of short adjustment time for PH value, and more stable PH value after neutralization without much fluctuation with time. The method of using the wastes to treat the wastes can not only realize the recycling of wasted alkali residues and solve the pollution problem of wasted alkali residues but also solve the treatment issue of viscose fiber waste water, thereby avoiding carbon emission caused by CaCO₃.

PHvalue of wastewater

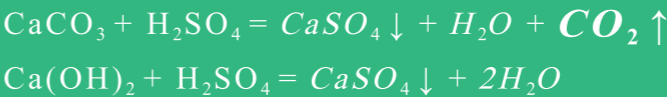
6—9

Annual use amount of acetylene sludge slurry

166731 m³

Carbon emission is reduced by

12888 tons



..... Conventional process route

..... Sanyou process route





The Next-generated Green Products

- I. Product matrix of Sanyou
- II. Tangcell® EcoTang® — green revolution
- III. Tangcell® ReVisco™ - The next generation of cellulose fiber raw materials
- IV. Tangcell® Colored Viscose - a low-carbon solution for the industrial chain
- V. Tangcell® Lyocell
- VI. Tangcell® Bamboo Modal



Introduction

In order to lead the development of the new generation of green and sustainable man-made cellulosic fiber, based on the brand of “Sanyou®”, Sanyou has launched the high-end environmental protection brand, Tangcell® with the connotation of “technology, green, fashion” . It guarantees a green, transparent, and sustainable industrial chain while ensuring the lower carbon emission in the production process, and the traceability of the whole life cycle, thereby providing green and sustainable solutions for the textile industrial chain from the source.

Product matrix of Sanyou

As one of the leading enterprises in the industry, Sanyou has won wide recognition from downstream customers in terms of product quality and service, and was rewarded as the industrial “High-quality Supplier” in 2020. Based on the strong R&D strength, Sanyou has successively developed differentiated products with different raw material sources, various functions and colors and suitable for different application fields.

Product matrix of Sanyou

Brand	Product name	Special raw materials		Innovative production process			Industrial chain innovation
Sanyou®	Viscose for Vortex spinning			Innovative process	Special oil agent		
	Viscose for ring spinning			Innovative process	Special oil agent		
	Viscose for non-woven				Special oil agent		Special for wiping and sanitary materials.
	Ultra-staple Viscose			Innovative process			Can be washed away naturally
	Bamboo	Sustainable bamboo					
	Fire-resistant viscose			Function customization			
	Negative ion viscose			Function customization			
	Antibacterial viscose			Function customization			
	Bamboo charcoal viscose			Function customization			
Tangcell®	Colored Viscose			Color customization			Avoiding pollution of printing and dyeing process
	EcoTang®	Sustainable wood sources		Closed-loop process	Low carbon emission		Traceable
	Modal	Sustainable wood sources		Closed-loop process	Low carbon emission	Innovative process	
	Lyocell	Sustainable wood sources		Innovative process	Low environmental impact		
	ReVisco™	Waste textiles	Cotton liner	Innovative process			Recycled
	Bamboo Modal	Sustainable bamboo		Innovative process			
	Customized fiber	Customized raw materials		Innovative process	Customized functions		Applicable to unique application scenarios



Tangcell® EcoTang® — green revolution

Relying on a comprehensive and scientific third-party certification system, EcoTang® ensures that the products come from Compliance Forest or sustainable raw materials, the production process reaches the requirements of close loop production. By tracer agents, EcoTang® could be transparentized in the whole life cycle and the final degradation of EcoTang® in the natural environment can be realized to finish the life reincarnation: nature-based products finally come back to nature.

1) Tracer System

In order to ensure the traceability of Tangcell® EcoTang®, Sanyou has independently developed the molecular tracing technology and detection method with special components via scientific technology research. The special tracer agent for Tangcell® will not disappear in the production process, and it can realize the whole-process identification of products even after the processing and transformation of textiles through the industrial value chain, so as to ensure the complete transparency and traceability of fiber brands and consumers in finished clothing. For various kinds of products (including fibers, yarns, fabrics, garment, etc.) in the process of industrial chain processing, Sanyou has provided special supporting customized detecting devices, and arranged professional personnel to conduct testing and issue test reports. That will help ensure that retailers, brand owners and consumers can timely and accurately identify whether textiles contain components of Tangcell®EcoTang®.

2) Special column—Certification

Sustainable raw materials	 
Closed-loop production	  
Sustainable products	 



¹⁴ <https://hotbutton.canopyplanet.org>


3)OEKO-TEX® Association

Based on the requirements of CV Roadmap, Sanyou selects STeP by OEKO-TEX® and Standrard 100 by OEKO-TEX® (Trust textiles) issued by OEKO-TEX® Association as tools to verify the content of harmful substances in Sanyou’s products and the sustainable management level in all aspects of Sanyou’s production and operation. Sanyou strictly complies with the list of prohibited use specified in the standard, and refers to the recyclable materials listed thereof. At the same time, Sanyou requires each supplier to abide by the requirement of OEKO-STeP and sign the Code of Conduct Commitment to prohibit the use of restricted chemicals. It has promoted the action that some packages are produced with recyclable materials. Apart from the two certifications, Sanyou has obtained the label of MADE IN GREEN by OEKO-TEX® issued by the organization, so as to ensure that the products pass the test of harmful substances. It realizes that the products are manufactured in a sustainable manner, and the whole-process tracking from all sections of the textile industrial chain to the end customers.



4) “Green Shirts” by Canopy

Canopy is an international non-profit environmental protection organization aiming for the protection of forests, species and climate. With hundreds of partners, it jointly formulates innovative solutions to improve the sustainability of the fiber supply chain and protect the primitive and endangered forests in the world. As an initiative of sustainable fiber procurement, CanopyStyle aims to improve the value chain of the whole cellulose fiber, confirm whether and when manufacturers confirm that the procurement sources of wood pulp are low risk, i.e. whether they come from primitive endangered forests or controversial raw materials. Sanyou has conducted active cooperation with Canopy for many years. It has disclosed the pulp procurement policy and completed Canopy audit in 2019, which made it become the first man-made cellulose fiber enterprise in China to obtain the rating of “Green Shirts” in the Hot Button Report released by Canopy. In 2020, Sanyou further improved the sustainable performance in the field of raw materials and get 25 buttons.

Producer	Production capacity (%)	Hot Button Assessment	Ranking Notes on Audit Results	Completion of Audits	Conservation Urgencies	Need Generation Solutions	Sourcing Policy	Transparency	Supply Shirts	High Risk Sourcing	TOTAL BUTTIONS	Chemical Use & Emissions
Lenzing	14.2		LR	6	3.5	5.5	4	7	4	+0.5	30.5	
Eastman Chemical company (Acetate)	2.7		AE	5	4	4	4	5	4		26	
ENKA (viscose filament yarn)	0.1		LR	6	3	3.5	4	6.5	3		26	
Kelheim Fibres	1.2		LR	6	3	4	4	5	3		25	
Tangshan Sanyou	10.9		AE	4.5	3	5	4	5	3	+0.5	25	
Xinzhong Chemical Fiber Co., Ltd. (Known as Baifu Group) (viscose filament yarn)	11		AE	4.5	3	3.5	4	5	3	+0.5	23.5	
Jilin Chemical Fiber Co., Ltd. (viscose filament yarn)	1.0		AE	4.5	2	3	4	6	3		22.5	

¹⁵<http://www.ts-sanyou.com.cn/syhx/contents/1027/37903.html>

Tangcell® ReVisco™ - The next generation of cellulose fiber raw materials

Sanyou, together with its partners in the industrial chain have actively promoted the research and development of pulp preparation technology and spinning rubber preparation technology through the recycling and classification of waste textile, successively solved the problems like poor quality and difficulty in forming when using recycled pulp for spinning, and broke the technical bottleneck in terms of man-made cellulose fiber recycling.

1.Key partner: Re:newcell

Re: newcell is a Swedish innovative company engaged in textile recycling technology research, dedicated to the research work of waste textile pulping technology. Its technology can convert waste textiles such as jeans and T-shirts into new dissolved wood pulp. Sanyou started to cooperate with Re:newcell in 2019 to jointly optimize the key technological parameters in terms of waste textiles pulping - regenerated pulp spinning, breaking the technical bottleneck in terms of waste clothing pulping - spinning technology. Sanyou uses Re:newcell's regenerated pulp as raw material to produce regenerated viscose, and the proportion concerning the recycled pulp added during the process is more than 30%. In 2020, Tangcell® and Re:newcell reached a five-year cooperation agreement, aiming to continue to build a new circular economy chain.

2.Key partner: Södra

Södra is the largest association of forest owners in Sweden and is also an international forest industry group. With its business being based on the processing of forest products of its members, it is committed to sustainable logging rate, responsible logging, and multiple management measures.

As one of the core suppliers of Sanyou for dissolved pulp, Södra also carried out the research on regenerated textiles pulping technology. At present, Södra provides OnceMore™ dissolved pulp based on waste textile recycling technology for Sanyou, which contains 3% to 20% of used textiles. In February 2020, Sanyou successfully produced the viscose staple fiber with OnceMore™ dissolved pulp as the raw material, and the content of used textiles in the fiber can reach 20% currently.

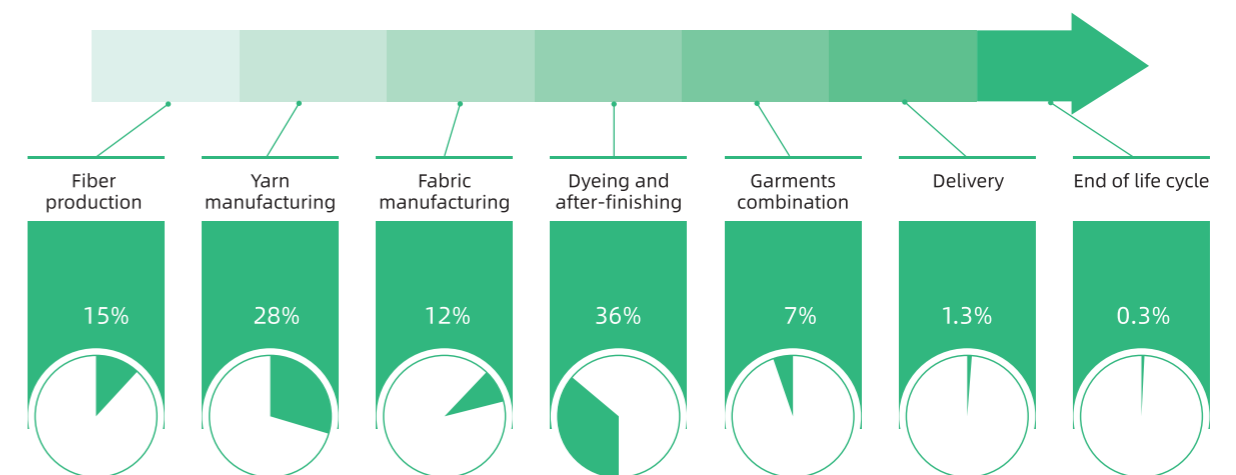
3.Recycled Waste textiles - next generation solutions¹⁶

Sanyou attaches great importance to the sustainability of the main pulp source - the forest. To this end, Sanyou continues to focus on examining the sustainability of raw material sources of suppliers and make active efforts to explore solutions in terms of innovative raw material. As the initiative - "next generation solutions" proposed by Canopy is in line with Sanyou's concept of sustainable development, both sides reached a consensus to use "next generation" pulp raw material substitutes, reduce the demand for natural cellulose, no longer waste global forest resources, reduce carbon emissions, so as to promote circular economy. To this end, Sanyou became the supporter of "CanopyStyle Next Generation" and signed the world's first "Early Adopter of Next Gen MMCF Pulp", with the purpose of supporting Canopy and its partners to develop and expand a new generation of alternative fiber products, take the lead in bringing new materials to the market and promote the commercialization of new technologies.

¹⁶<https://canopyplanet.org/campaigns/canopystyle/canopystyle-next-generation-vision-for-viscose/>

Tangcell® Colored Viscose - a low-carbon solution for the industrial chain

According to the research on the impact of the global textile and garment industry on the environment conducted by Quantis¹⁷, the carbon emission in the printing and dyeing / after-finishing stage accounts for about 36% of the total carbon emission of textiles in the full life circle of clothing. Therefore, a new solution is proposed to reduce the environmental impact brought by textiles and clothing during the full life cycle, namely, dyeing the fiber directly through the pre-spinning injection process in the production of fibers to avoid the carbon emission produced by textiles in the printing and dyeing process.



Tangcell® colored viscose fully mixes environment friendly color paste with sustainable paste, and has successively developed colored fiber products of black, navy blue, pink, water blue, clear blue and other colors, avoided the using of chemicals such as formaldehyde and aromatic amine for printing, dyeing, and after-finishing, and provided you with safer care while maintaining the comfortableness brought by cellulosic fiber. It is estimated that using 1 ton of Tangcell® colored viscose can reduce 1.1 ton of coal equivalent and water by 90 ton.¹⁸



¹⁷<https://quantis-intl.com/measuring-fashion-report-press-release/>

¹⁸According to the "Printing and dyeing Industry standard Management Requirements" issued by the Ministry of Industry and Information Technology of China

Tangcell® Lyocell

For the purpose of promoting the green transformation of the man-made cellulose fiber industry, Sanyou actively promoted the R&D of Lyocell production technology. As for Lyocell, NMMO is used as the solvent to replace carbon disulfide in the viscose fiber process, avoiding the pollution from sulfur-containing waste gas in the production of fiber. NMMO solvent can be recycled in the whole production process system, and an independent closed-loop production system is then formed, and its product recovery rate is more than 99.7%.

The 5,000-ton Lyocell project of Sanyou was completed and put into operation in 2019. In 2020, the annual output reached 6,198 tons and the capacity utilization rate reached 124%. In 2021, Sanyou announced that it plans to invest an additional RMB1.635 billion to prepare for the 60,000-ton Lyocell project, and the production capacity in the future is expected to reach 200,000 tons.

Tangcell Lyocell is the only one in China with Canopy’s green shirts rating so far.

Tangcell® Bamboo Modal

1.Raw material

Tangcell® Bamboo Modal originates from the bamboo forest certified by FSC, Tangcell Bamboo Modal aim to reduce the dependence of man-made cellulose fiber on forest resources as far as possible, and to figure out an effective way for the rational and efficient utilization of bamboo resources.

2.Technique

Tangcell® Bamboo Modal is produced on the basis of modal technique, and it fully inherits the advantages of modal fiber in terms of fiber strength and wet modulus. It has good air permeability and moisture transfer effect, and is quite suitable for personal wearing.



Chapter IV

Corporate and Social Responsibility

- I. Party construction
- II. Fighting against COVID-19
- III. Poverty alleviation
- IV. Democratic management
- V. Employee development
- VI. Public benefit activities



Introduction

Sanyou continues to advocate and promote voluntary service, encourage, and support its staff to actively participate in volunteer activities serving the community and society, cultivate the excellent personality such as being caring and supportive, and contribute its share to the cause of the community.

Party construction

1) Strengthen political development

Sanyou resolutely implements the spirit of important instructions made by the general secretary Xi Jinping, strengthens the “Four Consciousnesses”, upholds the “Four-Sphere Confidence”, lives up to the “Two Upholds”, gives full play to the role of party committees in “guiding the direction, managing the overall situation, and ensuring implementation”, raises the political standing of party members and cadres, enhances their political awareness, strengthens their political responsibility, maintains their political orientation, keeps to the correct political direction and improves their political ability.

2) Highlight ideological building

Sanyou keeps to take studying and implementing Xi Jinping thought on socialism with Chinese characteristics for a new era as its primary political task, continues to strengthen the theoretical learning of theoretical learning center group of its party committee, makes sure that theories are truly understood to guide practice and promote work.

Over the past two years, the theoretical learning center group of the party committee has held 20 special studies and seminars. The leading group took the lead in reaching the points of contact and has held 22 thematic party classes to preach the spirit of the Fifth Plenary Session of the 19th CPC Central Committee. Besides, the theoretical learning center group has carried out situation and task education activities with the leading group, party branch and teams collaborating with each other from top to bottom to guide all cadres and staff to exert their ideas, wisdom, and strength into the task of benefits-achieving battle.

3) Carry out theme education

Sanyou carries out the theme education themed “stay true to the Party’s original aspiration and the founding mission”, accurately understands the



general requirements of “staying true to the original aspiration, undertaking the mission, finding out where we have lagged behind and ensuring implementation”, runs learning and education, investigation and research, problems inspection and rectification implementation through the whole process of the theme education centering on the goals of “theoretical studies are fruitful, ideology and politics are baptized, daring to take one’s responsibility when doing business, solving problems for the people, setting an example by being upright and clean”, thus promoting the implementation of the party’s management and self-governance responsibility. It organizes members of the central group to conduct centralized learning and discussion for one week to make sure the theoretical learning is truly paid off. The team members of Sanyou reach the grassroots level, employees, and reality, and produced 11 high-quality research reports.

4) Pay close attention to inspection and rectification

Sanyou, bearing high sense of political responsibility in mind, actively cooperates with the inspection team of State-owned Assets Supervision & Administration Commission of the People’s Government of Hebei province to successfully complete the inspection work, carries out deep introspection on the gaps and deficiencies regarding the problems required to be rectified, improves ideological understanding, and takes effective measures for rectification. At the same time, taking inspection and rectification as an opportunity, Sanyou promotes the focus towards main responsibilities and businesses, and the implementation of key tasks such as scientific and technological innovation and deepening reform.



Fighting against COVID-19



1) Epidemic prevention and management

Under the overall planning and unified command of the party committee of Sanyou, all grass-roots party branches take concerted action and uphold the same goal, and party members, cadres and staff conduct joint prevention and control, as well as mass prevention and mass treatment, realizing “zero imported case and zero infection”. Sanyou establishes a four-level joint control mechanism covering “the Group, Sanyou, workshops (departments and offices) and teams (administrative offices), does well in joint prevention and control in terms of personnel investigation, access control management, logistics support, canteen management, etc. Besides, it establishes a two-level (“domicile - the Company”) investigation and tracking standing book to conduct regular investigation in key areas and achieve “early detection, early quarantine and early treatment” .

2) Pay attention to the health of employees

During the pandemic, Sanyou actively purchased disinfectants, masks and other epidemic prevention and control supplies and distributed them to employees in time. Taking WeChat as the platform, Sanyou strengthened the publicity, guidance and education regarding epidemic prevention and control, injecting strong confidence and strength into the battle against the pandemic. It actively responded to the call of the central government and carried out voluntary donation activities, donating a total of RMB108,994.2. It did a good job in terms of warm-hearted services, organizes young volunteers to send offerings to the employees who return to the factory from other areas and are under quarantine for observation in the dormitory, so as to help these employees get through the “quarantine period” smoothly.

3) Ensure anti-epidemic materials production and supply

Viscose for non-woven , one of Sanyou’s main products, is one of the raw materials of medical materials needed by pandemic prevention and control. It is processed through layers of extraction, does not contain harmful substances such as chlorine ions, and has no fluorescence reaction. Besides, it contains less surface-active substances, low impurity content, has high whiteness and good cleanliness. It is mainly used as raw material of spunlace non-woven fabric, and is widely used in the production of masks, gauze, surgical quilt, medical towel pad, wet tissue, etc. Since the outbreak of the pandemic, the demand for this product has surged. For the purpose of ensuring the material demand, Sanyou closely combines production and operation with pandemic prevention and control with a high sense of political responsibility, scientifically organizes production and transportation, and effectively ensures the high-quality and sufficient supply of raw materials for medical supplies. At the same time, it works with responsible downstream enterprises through the co-branding of Tangcell to maintain a stable product price.

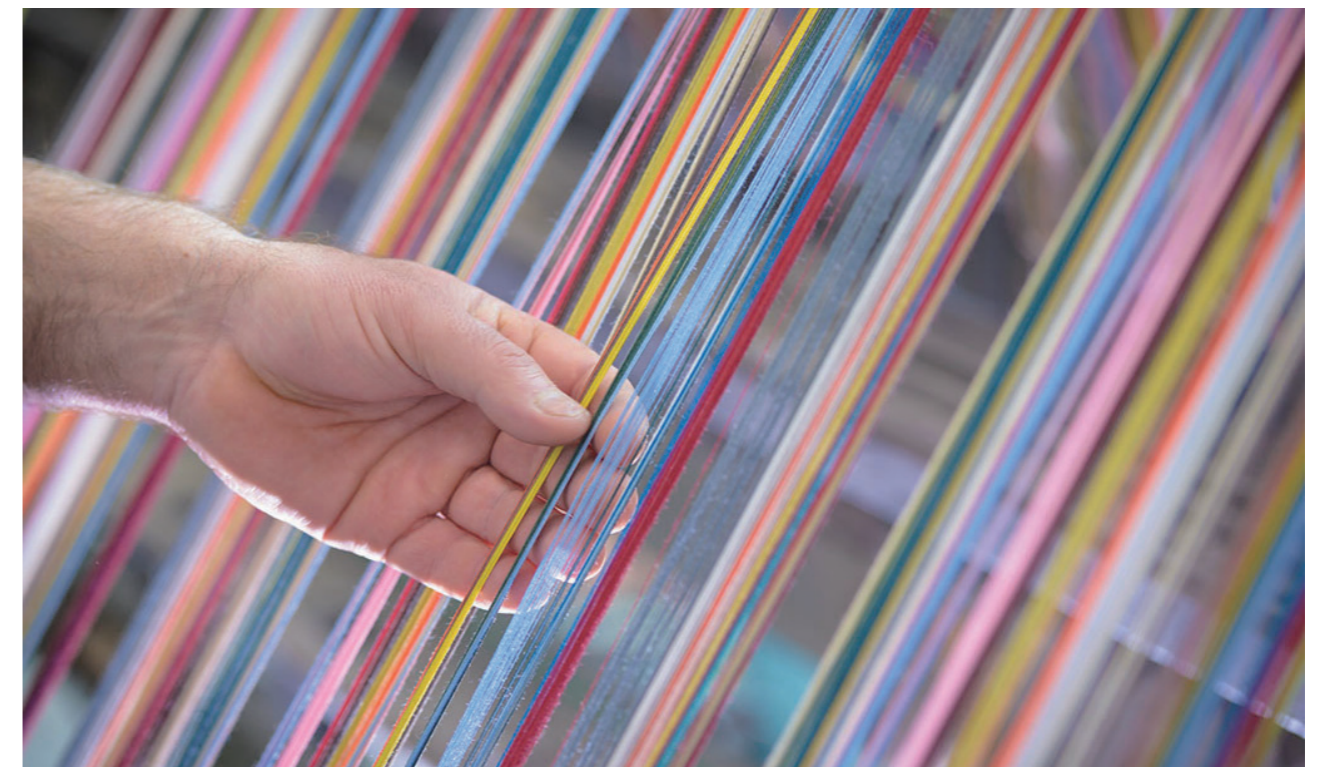


Poverty alleviation

Sanyou always views poverty alleviation as an important part of its social responsibility. The party committee of Sanyou holds working meetings on a regular basis to study and deploy poverty alleviation measures. Centering on the “two no worries and three guarantees” , Sanyou has solidly carried out poverty alleviation and conducted real practice and solid work in accurate identification, industrial development, poverty alleviation and will fostering.

16 contact officials in charge of poverty elimination of Sanyou pay regular visit of the poor villages every two months, and irregularly communicate with the poor households by telephone to fully understand the actual difficulties of the poor households. For three consecutive years, they distribute rice, flour, oil, and other daily necessities to the poor households on the eve of the Mid-Autumn Festival and the Spring Festival, totaling more than RMB160,000 realizing the full coverage of partner assistance.

Members of the resident working teams earnestly performed their duties, and actively helped villages obtain the support funds of RMB500,000. They helped the newly-built cattle-raising village raise 200 heads of cattle, promoted standardized breeding, and led 10 poor households to increase their income. Roof photovoltaic systems of 19 households were combined to the grid, creating an annual benefit of RMB1,500 for each household. They have planted 100 mu of pollution-free millet, and the benefit brought by each mu is RMB2,000. They have completed the 1,200-mu slope to terrace project, increasing both production and income. They have won support funds of RMB3 million for the villages, and initiated a vegetable greenhouse project, which achieved an annual output value of RMB700,000 after completion, and an annual income increase of RMB120,000 collectively for the villages. They led 40 poor families to achieve stable income increase, greatly improved the industrial structure and helped poverty alleviation. They made the utmost of the Group’s RMB300,000 support fund to improve village infrastructure and people’s livelihood, support the construction of village roads, build villagers’ service centers, and develop prosperity-achieving industries. During the pandemic, they fought side by side with the village cadres and the masses, and equipped the villages with 50kg sodium hypochlorite solution. While guiding the villagers to use disinfectant, they advocated the villagers to develop good hygiene habits, and asked them not to gather together and drop around.





Democratic management

Sanyou has continuously maintained and improved democratic management systems such as the congress of workers and staff and transparency in factory affairs, listened attentively to the workers' voices, responded positively to their demands, and promoted the harmonious development of labor relations, giving full play to the role of staff as the main force in the development of Sanyou. It organizes and convenes the congress of workers and staff, guides, and regulates the orderly participation of workers in the administration and discussion of political affairs, and gives play to the role of workers as masters. It strengthens the inspection of staff representatives and the supervision over democratic management at the grass-roots level, and guides the staff to actively participate in democratic decision-making, democratic management, democratic supervision through targeted exchanges and special training, promoting the quality and efficiency enhancing in terms of democratic management. It establishes a "three-level" disclosure system covering Sanyou, workshops, and teams, timely releases major decisions involving the vital interests of employees and the direction of enterprise reform and development on a monthly and annual basis, and accepts the inspection and supervision of employees.



Employee development



Skill upgrade. Focusing on building a knowledge-based, skilled, and innovative staff troop, Sanyou, highlighting competitiveness, professionalism, and benchmarking, launched the staff skills-based labor competition themed "Ingenuity builds a dream, skills win the future", covering more than 1,000 staff and workers from 11 types of work. 11 technical champions and 44 experts have won the competition. It pays close attention to the training of all staff members to help benefits-achieving battle. During the year, it has carried out 227 post competitions, with more than 4,000 employees participating in these competitions, recognizing 227 post champions and 345 post experts. It strengthens the transfer of skills through horizontal and vertical benchmarking of posts in the same system, and accelerates skill "upgrade" of all staff.



Bring out the best in everyone. Sanyou carried out mass-based economic innovation such as rationalization proposal and "five smalls" innovation in a deep-going way, and created a model worker innovation studio to give full play to the leading role of model workers and promote the innovation and benefit achieving of all staff. Guided by the benefit achieving activity themed "starting from me, with all staff participating in the whole process in an all-round way", Sanyou has made great efforts in reducing cost, improving quality, and increasing efficiency. It has solicited 3,600 rationalization suggestions throughout the year, which is expected to create a benefit of RMB20 million. In order to get "golden fruits" from the "golden ideas", it held excellent suggestions promotion meetings to promote excellent suggestions and typical practices, built platforms for mutual exchange and learning from successful experience, so as to gather mass wisdom, joint forces and consensus for Sanyou's benefit achieving and innovation and benefit creating, and promote the development of Sanyou in terms of quality and efficiency.



Reward mechanism for scientific research innovation. Sanyou group has set up Special Fund for Science and Technology Innovation Awards, and the amount granted for science and technology innovation each year amounts to more than RMB3 million. The Group has also established systems for motivating the development of professional and technical personnel such as "chief engineer system" and "specialist system", established a four-level scientific and technological innovation system covering the "strategic layer, R & D layer, execution layer and basic layer", formulated and improved a series of innovation management systems suitable for the Group's management mode, promoted management with system, promoted improvement with assessment, so as to promote the standardization and systematization of scientific and technological innovation. The Group has also successively established innovation platforms such as postdoctoral scientific research workstation, specially invited academican workstation and national-level technology center. The investment in science and technology of Sanyou Group has increased year by year, and has invested RMB4.95 billion in science and technology.

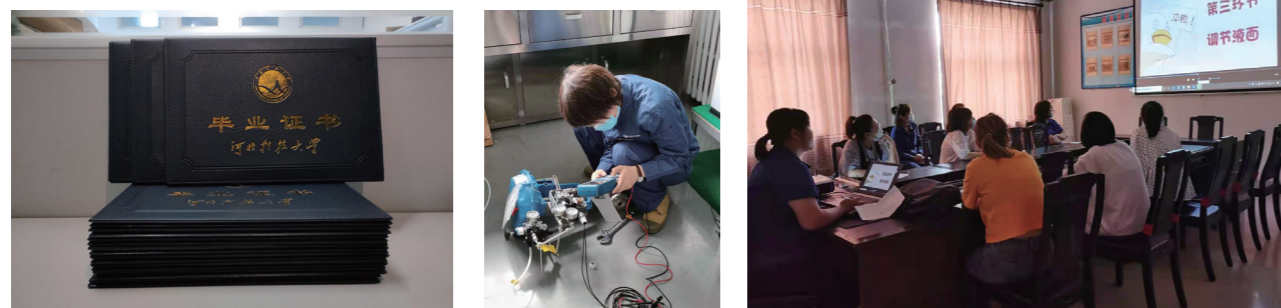


Academic education: Sanyou encourages employees to upgrade their academic qualifications independently, and formulated supporting incentive policies. In 2020, 436 employees have graduated, of which, 2 are masters, 241 are undergraduates and 193 are junior college students.

Course development: Sanyou organizes employees to develop courses applicable to their posts and organizes them participate in the annual lecturer competition, micro course competition and short video competition of the Group. In 2020, 4 lecturers won awards in the Group's lecturer competition, 11 micro courses won awards in the micro course competition, and 7 won awards in the Chinese short video competition.

Business training: Sanyou has conducted continuing education for professional accounting personnel, metrological verification personnel and registered safety engineer, trainings for dangerous chemicals emergency rescue personnel, fire facilities operators, elevator operation special training, human resources system training, grass-roots leadership training. In 2020, a total of 140 personnel has received relevant trainings.

On-the-job training: Sanyou has carried out post knowledge online training and daily on-the-job training, professional skills upgrading training, professional skills level recognition, professional skills competition targeting all its staff, so as to improve the position competence of its staff. In 2020, 36 new workers had received training, 17,876 workers had received daily on-the-job training, 380 had received vocational skills upgrading training and skill level recognition, and 3,562 had gone through the online training assessment. In the third Tangshan Artisan Competition, 8 people won the award, and one of them was awarded the title of "Technical Expert".



Public benefit activities

1) Aid To Students

From 2019 to 2020, Sanyou sends volunteers to Xinzhuangzi Central Primary School in Dibeitou Town, Zunhua City every year to deliver sports equipment, books, and other school supplies to poor students. These volunteers carried out "little wish" collection activities to realize children's small wishes. At the same time, in order to help children in the villages learn how to go online in a safe, civilized, green and healthy manner, volunteers shared and interacted with children through network security courses on network risk points such as "protecting personal privacy and keeping away from harmful information", and brought them a characteristic "network security course".



2) Service for the Public

For many years, Sanyou organizes young volunteers to go to the living quarters to provide handy services for the public. They are engaged in electrical maintenance, voluntary haircut, physical examination, cutter grinding and other tasks, solving the difficulties and problems facing residents in their life.



3) Voluntary Blood Donation

For the purpose of supporting social and public welfare undertakings and fulfill the social responsibility of donating blood to save people, Sanyou has carried out "voluntary blood donation" activities from 2018 to 2020, 108 employees have donated 32,800 ml of blood. Its cadres and employees have provided blood supply for clinical care with their own public welfare actions.



4) Donate Old Clothes

In 2020, Sanyou has donated more than 3,000 pieces of clothes to offer warmth to impoverished mountainous areas. At the same time, it advocated the sustainable development concept of recycling waste textiles and reducing deforestation, with the aim to contribute to the creation of green Sanyou.





The Vision--- Carbon Neutral



Introduction

Climate change and biodiversity loss are two major global environmental challenges to human development. The global outbreak of COVID-19 has further raised the awareness of humans in terms of the importance of harmonious coexistence between man and the natural environment. Mitigating and responding to climate change and reversing the loss of biodiversity have become key issues for human development after the 2030 Sustainable Development Goals formulated by the United Nations. On September 22, 2020, general secretary Xi Jinping announced at the general debate of the 75th session of the United Nations General Assembly that China would strive to have CO₂ emissions peak before 2030 and achieve carbon neutrality before 2060. On December 12, 2020, President Xi Jinping delivered an important speech at the Climate Ambition Summit on the fifth anniversary of the Paris Agreement, announcing that China's carbon dioxide emissions per unit of gross domestic product will be reduced by more than 65 percent by 2030 compared with 2005. As China has put forward the vision for peak carbon dioxide emissions and carbon neutrality, Sanyou began to examine its development path, clear its vision for sustainability to promote the high-quality development of the man-made cellulose fiber industry.

Sanyou's vision for carbon neutrality

Sanyou will strive to achieve 30% carbon emission reduction per unit product by 2030 and carbon neutrality by 2055.

To this end, Sanyou will continue to maintain close cooperation with interested parties in terms of biodiversity protection, regional circular economy, closed-loop production in the factory and common growth, and will use third-party tools, standards, and guidelines to further improve the sustainable development performance of Sanyou.

More importantly, Sanyou is launching the Tangcell® LCA project relying on the traceable industrial chain under construction, and is, relying on the technical advantages of Sanyou, developing low-carbon Tangcell® products that can reduce the carbon emission in the downstream processing process based on clarifying the proportion of carbon emission in each stage of the whole life cycle. To fulfill our vision and goal regarding carbon neutrality, we will work with partners in the industrial chain to jointly build a sustainable and traceable low-carbon industrial chain.

Biodiversity protection

Sanyou will comprehensively audit the risks in terms of sustainability of dissolving pulp and the forest industry chain relying on third-party tools to ensure that products do not come from primitive and endangered forests. Sanyou will work with partners to continue to support the R & D of innovative pulp and improve the use ratio of waste textile pulp.

Circular economy

Relying on the circular economy system of Tangshan Sanyou Group, Sanyou will further exploit the potential of circular economy based on the systemic circulation of industries in the industrial park, make the most of wastes and by-products generated during production, and minimize the environmental impact of the whole circular system.

Closed-loop production

Sanyou will continue to take CV Roadmap2025 as the guidance and use tools including Evaluation Index System Concerning the Cleaner production of Man-made Cellulose Fiber (Viscose Process), EU-BAT and ZDHC MMCF guideline to continuously improve its energy conservation and emission reduction level. On the basis of meeting the EU-BAT requirements, all factories of Sanyou will meet the class I index requirements specified in CV Roadmap 2025 by 2025.

Growing together

Sanyou will continue to bear Xi Jinping's entrust - "Making SOEs stronger and better is an important guarantee for giving full play to the superiority of the socialist system with Chinese characteristics" in mind, have the courage to undertake social responsibilities of state-owned enterprises, continuously improve the community environment, increase employee's income, maintain regional stability, undertake the obligation to help the poor, support rural revitalization, and give full play to the role of SOEs as pillars.

Sanyou's Vision for Carbon Neutrality

Sanyou will strive to achieve 30% carbon emission reduction per unit product by 2030 and carbon neutrality by 2055



Biodiversity protection



Circular economy



Closed-loop production



Growing together

