

A SUSTAINABLE SOLUTION PROVIDER WITH OVER 30 YEARS OF EXPERIENCE

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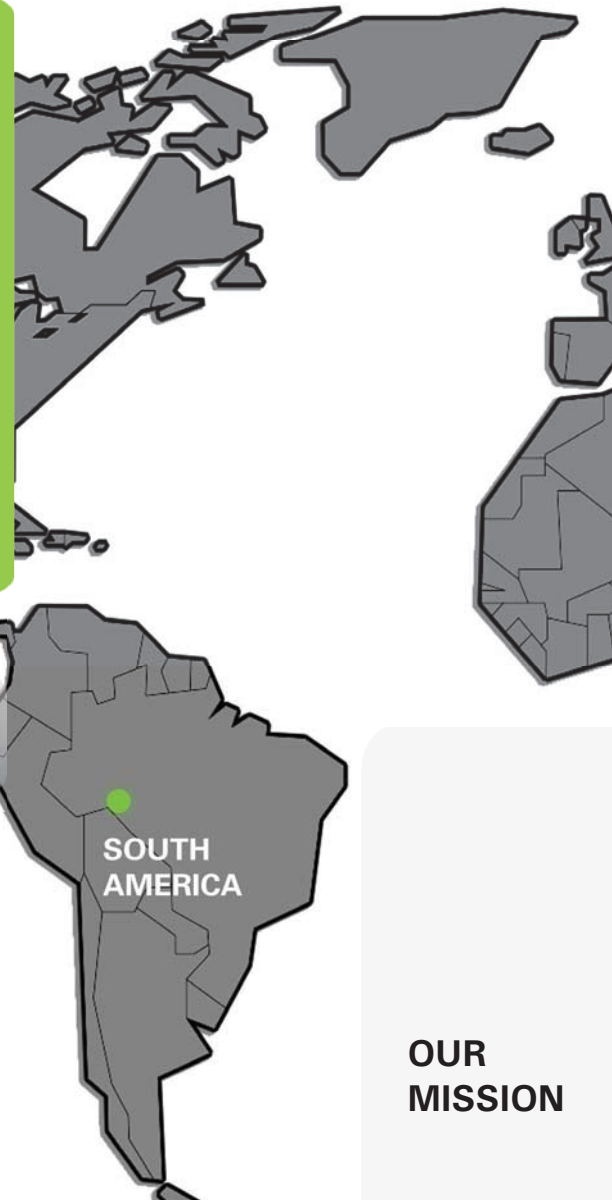
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COMPANY OVERVIEW

Founded in 1979, ecoWise Group is a Singapore-based company with subsidiaries in Malaysia and China that focuses on three core business segments namely, Resource Recovery, Renewable Energy and Integrated Environmental Solutions Provider.

ecoWise spans different regions including Singapore, Malaysia, China, Europe, Australia and Taiwan.

The Group has been listed on the Singapore Exchange since 2003.



**OUR
MISSION**



OUR VISION

To be the preferred environmental solutions and renewable energy provider with high integrity, corporate social responsibility and to create value for all stakeholders.

EUROPE

CHINA

TAIWAN

MALAYSIA

SINGAPORE

AUSTRALIA

To establish successful operations and management of renewable energy projects that contribute to social, economic and environmental benefits to stakeholders.

To establish awareness, propagate, promote and encourage use of environmentally friendly products derived from recycled waste.

To establish best practices in the manufacture and distribution of innovative value-added products that are in harmony with ecological principles.

To emphasize on research and development to provide environmentally friendly solutions to industrial processes.

OUR CORE EXPERTISE - RESOURCE RECOVERY

SINGAPORE

FROM COPPER SLAG TO ECO-CONCRETE

Used copper slag from various shipyards is collected and used as raw material in the production of eco-concrete™.

FROM HORTICULTURAL AND WOOD WASTES TO FUEL

Preparing the own fuel feedstock for the biomass power plants in Singapore through the collection and processing of horticultural and wood wastes at the Sarimbun Recycling Park.

FROM HORTICULTURAL WASTE TO COMPOST

Manufacturing of organic compost from the collected horticultural waste through patented ecoWise Active Composting Technology (ecoACT™) wastes at the Sarimbun Recycling Park. Compost produced has also been accredited the Singapore Green Label for “100% Natural Organic Fertilizer” by Singapore Environmental Council.

FROM AGRO-WASTE TO POULTRY FEED

Using steam generated from the biomass power plant in Sungei Kadut to recover and repurpose various food wastes into higher value animal feed.



MALAYSIA

RUBBER COMPOUND MANUFACTURING AND TYRE RETREADING

The Group's wholly-owned subsidiary, Sunrich Resources Sdn. Bhd. ("SRR" and together with its subsidiaries, the "SRR Group") is one of the largest rubber compound manufacturer and tyre retreading group. SRR Group's vertically integrated business model spans the manufacturing of mainstream and specialised rubber compounds, manufacturing of new tyres, to manufacturing of tyre products under the brand names of Sun Rubber, Sun Tyre, STAP and Saiko Rubber. In addition, SRR focuses on the provision of package services including total tyre management in Malaysia in a bid to increase awareness and confidence in retreaded tyres as greener alternatives to new tyres.

CHINA

RUBBER COMPOUND MANUFACTURING AND TYRE RETREADING

Through its joint venture company, Chongqing eco-CTIG Rubber Technology Co., Ltd. (CECRT) and a franchise agreement with SRR, the Group has utilised its technological know-how acquired in Malaysia to develop a tyre retreading facility in Chongqing and also implements total tyre management for its main customer Chongqing Municipal Transport Development and Investment (Group) Co., Ltd. The Group has also expanded the applications of retreaded tyres and rubber compounds to the public transport, railways and aviation businesses in Chongqing.



OUR CORE EXPERTISE - RENEWABLE ENERGY

ecoWise is one of the pioneers in Singapore focusing on biomass power plant development, which utilizes biomass fuel like waste wood and horticultural materials to produce renewable energy in the form of electricity and heat energy.

The Group's biomass co-generation power plant in Sungei Kadut is one of the first in Singapore while the second biomass power plant, situated at the iconic Gardens by the Bay, commenced operation in November 2011.

CO-GENERATION BIOMASS POWER PLANT @ SUNGEI KADUT, SINGAPORE

- Electrical power: 1 MW
- Steam production capacity: 15 tons/hour
- Innovative use of electricity and heat energy for drying of agro and food waste for recycling purpose, heating of iso-tankers containing chemical additives and maintaining self-sufficiency in electricity requirement
- The first Clean Development Mechanism project registered by a Singapore company under the United Nations Framework Convention on Climate Change (UNFCCC)

ENERGY RESOURCE CENTRE @ GARDENS BY THE BAY, SINGAPORE

- Electrical power: 0.93 MW (supplied directly to Gardens by the Bay's power grid)
- Steam production capacity: 9.5 tons/hour
- Thermal Heat: 5.4 MW
- Chilled Water: 675 kW Cooling Load (generated for the purpose of plant cooling and conservatories cooling)
- Heat energy generated is utilised to create a dry atmosphere mimicking a temperate climate in the conservatories

BIOMASS POWER PLANTS @ CHANGYI IN CHINA

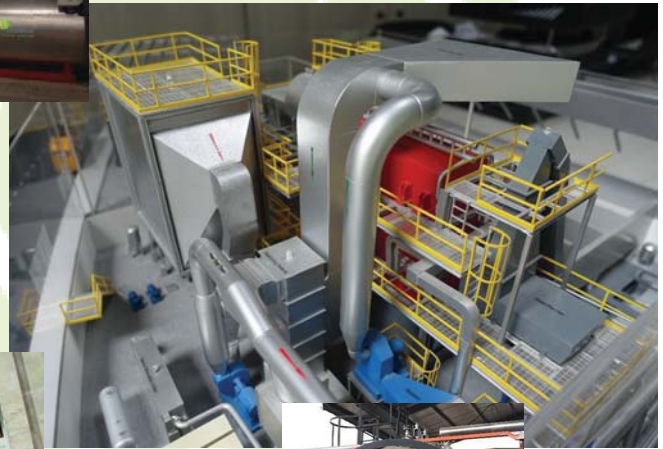
- ecoWise acquired the Changyi Enersave Biomass to Energy Co., Ltd (CEBEC) Plant in 2013
- Electrical power: 24MW / hour
- Steam production capacity: not less than 40 tons / hour



OUR CORE EXPERTISE - INTEGRATED ENVIRONMENTAL MANAGEMENT SOLUTIONS (IEMS)

ecoWise provides 'low carbon' environmental solutions targeted at addressing issues related to clean energy as well as waste and resources management.

This includes a wide array of technical and consultative services ranging from process design and optimisation; engineering, procurement and construction; testing and commissioning to operation and maintenance of the engineering facilities.



OUR CORE EXPERTISE - RESEARCH AND DEVELOPMENT (R&D)

The key focus of our R&D Department lies in the area of agriculture and aquaculture sustainability. The team looks specifically into achieving the incorporation of resource recovery concepts into farming, thereby achieving entirely new and modern farming techniques that generate higher efficiency and productivity, lower carbon footprint and demonstrate the idea of circular economy.

The ecoWise-Rongyao Ecotech Park also demonstrates its capabilities to incorporate advanced and sustainable technologies in the aquaculture business such as sustainable fish feed production which successfully makes use of recycled materials and alternative protein powder as key ingredients. In addition to catering for internal farm consumption, ecoWise aims to spread the awareness of sustainable farming through supplying the eco-feed to other local and regional farmers.

High-tech agriculture application is another key area for the R&D Department. The team has successfully developed fully organic compost and fertilizers that not only reduce the carbon footprint but also serve as comparable, if not, better quality variants as compared to commercially available options. All of which play an important role in supporting Singapore's endeavour to enhance food security by maximising crops productivity in a highly land scarce nation.



DID YOU KNOW?

ecoWise has also been promoting, developing and pursuing businesses that are sustainable, together with our environmental friendly and conscious partners in different regions. One of the significant initiatives was the joint venture between ecoWise, China Energy Conservation and Environmental Protection Group, the largest Chinese State Owned Enterprise focusing in the energy conservation and environmental protection sector, and UK Carbon Trust to form China UK Low Carbon Enterprise Co., Ltd. ("CULCEC") in 2011.



75,000 tons of wood tree waste was recycled in 2017



29,300 tons of carbon dioxide was reduced by the Group's green industrial process in 2017



59,000 tons of copper slag was repurposed in 2017



63,000 tons of food waste was recovered in 2017



129,500 tons of solid waste was converted into re-purposed eco-products in 2017

MILESTONES OF ECOWISE



Moved into its current factory at Sungei Kadut



Launch of the first co-generation biomass power plant at Sungei Kadut



Sunrich retreaded tyres accredited with MS224:2005 Production Standard

ecoACT™

1979

ecoWise was established in Singapore

1991



2003

ecoWise was listed on the Singapore Stocks Exchange

2004

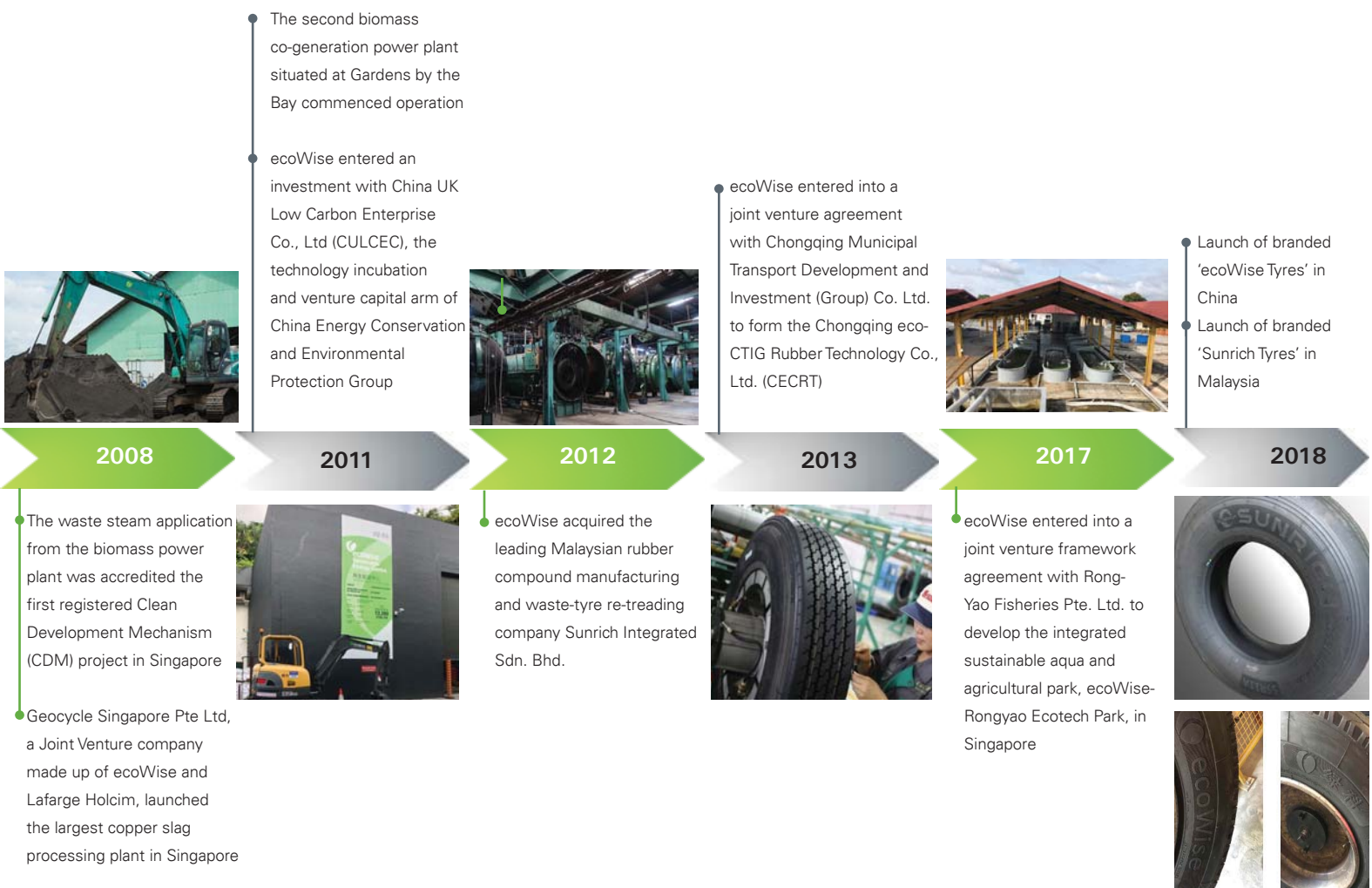


2006

The compost and fertilizer products produced from the patented ecoACT™ technology received the Singapore Green Label accreditation as "100% Natural Organic Fertilizer"

2007





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Scan
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提供一站式可持续环境解决方案

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公司概况

绿科集团成立于1979年，根植于新加坡，并于马来西亚和中国大陆设有子公司，专注于三大核心业务，即资源再生、可生能源、提供环境综合解决方案。集团的业务覆盖新加坡、马来西亚、中国大陆、欧洲、南美洲、澳大利亚和台湾等地区。

集团于2003年在新加坡交易所挂牌上市。



我们的使命

我们的愿景

努力成为首选的综合环境解决方案和再生能源项目的合作者。秉持正直的理念、具有高度的企业社会责任，并为所有的利益相关者创造价值。



建设运营管理顺畅，且在社会，经济和环境方面都能为利益相关方带来效益的可再生能源项目。

提高公众使用来自废弃物的环保产品的意识。

建立最佳的生产模式，提倡创新增值的生态产品。

重视研发，为工业生产过程提供环保的环境解决方案。

主营业务 - 资源再生

新加坡

將废铜渣變成环保水泥

将修船厂和造船厂废铜渣回收和循环处理成为生产环保水泥 (eco-concrete™) 的主要工程材料。

將园艺木材废料變成生物质燃料

通过在新规模化、产业化和高效率的再循环园收集和再处理园艺木材废料再循环园，为集团在新加坡的生物质电厂提供清洁燃料。

將园艺木材废料變成肥料

在再循环园透过专利堆肥技术(ecoACT™)把园艺及木材废料循环再生为肥料，这些百分百有机肥料同时荣获了新加坡环境理事会颁发的「新加坡绿色产品标签奖」。

將回收食品废料變成动物饲料

利用高科技技术回收食品废料再生为高品质的动物饲料。



马来西亚

复合橡胶生产和轮胎翻新

集团的全资子公司日升集团是马来西亚最大的橡胶制品制造商和轮胎翻新公司之一。日升集团的垂直式综合管理商业模式，从事橡胶复合材料和特制橡胶复合材料的生产和新轮胎制造，并拥有四大品牌Sun Rubber, Sun Tyre, STAP and Saiko Rubber的轮胎产品。

除此之外，日升集团还致力于为马来西亚最终用户提供综合轮胎管理服务，以提升当地社会对把翻新轮胎作为新轮胎的更环保替代品的认识和信心。

中国

复合橡胶生产和轮胎翻新

绿科通过集团下属合资公司重庆绿科开投橡胶科技有限公司，与日升集团签订了特许经营协议，利用在马来西亚的专有技术在重庆市投产轮胎翻新设备，并为其主要客户重庆公共交通有限公司提供综合轮胎管理服务，以及将我们的翻新轮胎及橡胶制品扩展到轨道、铁路及航空枢纽领域。



主营业务 - 再生能源

绿科集团是在新加坡运营生物质能热发电厂的行业领先者，利用园艺和木材废料作为生物质燃料产生电力、热能和制冷所需的再生能源。集团在双溪加株的第一个生物质热电厂也是新加坡的第一个生物质热电厂，第二个生物质热电厂坐落在新加坡地标性建筑滨海湾花园，于2011年11月投产。

生物质双联发电厂@新加坡双溪加株

- 发电量：1兆瓦
 - 蒸汽量：15吨/小时
 - 电能和热能的创新应用：将回收食品废料进行烘干、为盛放化工品的罐式集装箱加热、满足自身电力需求
 - 第一个在联合国清洁发展机制（CDM）项目注册的新加坡项目
- 蒸汽量：9.5吨/小时
 - 供热量：5.4兆瓦
 - 供冷量：675 千瓦（冷负荷）（为电厂及温室制冷）
 - 产生的热能还被用于为温室创造干燥舒适的温带气候和环境

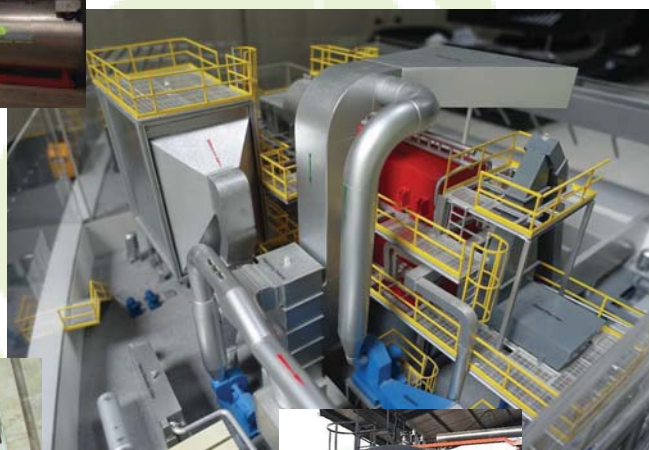
能源中心@滨海湾花园

- 发电量：0.93兆瓦（通过电网直接为滨海湾花园供应电力）
- 绿科集团自2013年5月接管昌邑安利兴生物质热电联产项目
 - 发电量：24兆瓦
 - 蒸汽量：不少于40吨/小时



主营业务 - 综合环境管理方案 (IEMS)

集团提供“低碳型”环境解决方案，旨在解决与清洁能源以及废物和资源管理相关的问题。广泛的服务范围涵盖技术和咨询服务，工艺流程设计及优化，工程设计、采购和施工，运行测试和调试及设备维护等多个领域。



主营业务 - 研究与开发 (R&D)

集团研发部门的研究焦点为水产业和农业的可持续性。研发团队专注研究将资源再生概念引入农业，研发创新和现代化的种植技术，以提高效率和生产力、减低碳足迹，同时展现循环经济的理念。

「绿科荣耀科技生态园」表现了集团揉合高科技水产业环保先进技术的能力，如成功制造以环保物料和蛋白粉代替品为主要成分的环保鱼饲料。这些环保鱼饲料除了供应生态园所需，绿科希望透过供应这些饲料给本地和附近地区的农夫来提高大众对有机耕种的关注。

高科技农业应用是研发部门的另一个焦点项目。研发团队成功研制百分百有机肥料，除减低碳足迹外，有机肥料的质素较市面上其他选择更高。这些发展对支持新加坡政府透过提高作物生产力以提升食物安全起着重大作用。



你知道吗？

绿科致力与一起关注环保的合作伙伴于集团经营业务的地区提倡、发展和追求可持续发展的业务。绿科在2011年与主业为节能减排、环境保护的旗舰中央企业「中国节能环保集团公司」和「英国碳信托」（UK Carbon Trust）签订合作协议，设立环保技术转移投资公司「中英低碳创业投资有限公司」（CULCEC），为集团推广可持续发展业务的重要里程碑。



2017年, 75,000吨木屑废弃物被回收再利用



2017年, 集团绿色工业流程减少了29,300吨二氧化碳



2017年, 59,000吨铜渣被重新改变用途



2017年, 63,000吨的食物垃圾被回收



2017年, 129,500吨固体垃圾被转化成可使用生态产品

绿科集团的里程碑



公司迁入位于双溪加株的工厂现址



在双溪加株建造了集团第一个生物质热电联产电厂



日升集团旗下再生轮胎获认证符合MS224:2005制造标准

1979

绿科集团成立

1991



2003

绿科在新加坡证券交易所上市

2004



2006

通过集团专利ecoACT™技术生产的堆肥和肥料产品获新加坡绿色标签组织认证为「100%天然有机肥」

2007





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