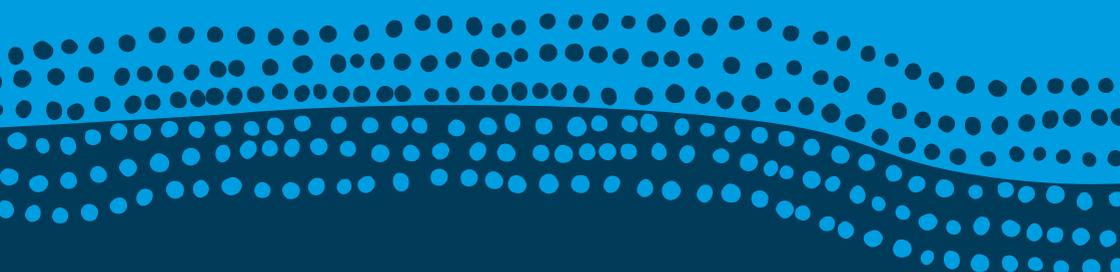




Australian Government



Methane to Markets Partnership

Australia

www.industry.gov.au/m2m

Introduction

Australia has been an active member of the Methane to Markets Partnership since it was launched in November 2004. The 2007 Beijing Methane to Markets Expo will be the premier event for showcasing the latest international developments, including both technologies and research, on the recovery and use of methane as a valuable clean energy source.

The Expo enables participants to network and explore business and other opportunities in the area of methane use with a wide range of other government, industry and research organisations.

Australia has considerable expertise in methane use across the key coal mining, oil and gas, agriculture and landfill sectors. This booklet provides a brief overview of what Australia has to offer in these areas, and all Expo participants are encouraged to consider the benefits of working with Australian partners.

You can follow up potential opportunities with Australian organisations listed in the Project Network on the Methane to Markets Partnership website, and at www.industry.gov.au/m2m. Australian Expo staff would be happy to assist you at the Expo Booth, where more information will be available.

介绍

自2004年11月以来，澳大利亚一直以积极的姿态参与“甲烷市场化伙伴关系”。“2007北京甲烷市场化博览会”将作为重要平台，来展示国际最新的关于甲烷，这一有价值的清洁能源的回采利用技术和研究成果。

博览会将使与会者有机会在甲烷利用领域与其它国家和地区的政府部门、企业和研究机构广泛接触，建立联系，寻找合作机会。

澳大利亚在煤炭、油气、农业等行业的甲烷利用方面有很多经验。本手册介绍了澳大利亚甲烷利用的情况和合作机会，欢迎各与会代表前来接洽。

您可以通过“甲烷市场化伙伴关系”网站的项目列表进一步与入网的澳大利亚机构联系合作事宜，澳大利亚代表团的服务人员也期待为您提供更多信息。

澳大利亚农业的甲烷利用

农业在减少温室气体排放方面具有可观的潜力。

“2006-2009澳大利亚国家农业和气候变化行动计划”中已将甲烷收集和利用列为畜牧业减排的重点领域。

“澳大利亚甲烷市场化研究和发展规划”已获批225万澳元。最近，该计划已开始探索兼顾经济效益和可持续发展的畜牧业甲烷减缓措施。

这一计划是政府和企业为猪肉、奶类、牛肉及相关加工环节，统一规划，协调合作的成果。

澳大利亚也曾经历过畜牧业甲烷收集和利用政策执行不当，相当程度上源于经济规模和能源价格等因素。

在限制碳排放的经济领域，甲烷收集和利用技术的可行性和适用范围将进一步扩大。新的甲烷市场化研究计划将重点关注将现有技术与澳大利亚畜牧业的特点相结合。

Australian Agriculture Sector

Agriculture can make a significant contribution to reductions in greenhouse gas emissions.

Methane capture and use has been identified as a priority area for emission reductions in the livestock sector as part of the National Agriculture and Climate Change Action Plan 2006-2009.

A \$2.25 million research and development program, titled Methane to Markets in Australian Agriculture has recently commenced to explore the potential for economic and sustainable mitigation of methane in the intensive livestock industries.

This programme is a collaboration of industry and government to specifically target the pork, dairy and beef feedlot sectors and the associated processing operations.

Historically methane capture and use in Australia's intensive livestock industries has had limited scope for implementation. Much of the delay has largely revolved around economies of scale and the relative price of energy.

In a carbon constrained economy however, the viability of this technology will be substantially changed and the scope of its application enhanced. The new methane to markets research program will concentrate on adapting existing technologies to suit the characteristics of Australian intensive livestock industries.



澳大利亚煤矿瓦斯产能

澳大利亚煤炭等矿产资源储量丰富。自1984年以来，澳大利亚一直是世界最大的黑煤出口国。现在澳大利亚是世界第四大煤炭生产国，位于中国、美国和印度之后。

我们丰富的煤炭开采经验为煤矿瓦斯利用奠定了基础。我们的专业经验涉及从先进的定向钻探到矿井通风，瓦斯收集和利用技术等方方面面。

一些科技突破，如由澳大利亚联邦科学与工业研究组织开发的VAMCAT技术（瓦斯通风催化涡轮机技术）正在中国进行试运行。

澳大利亚拥有几家世界最大规模的煤矿瓦斯项目，如3.2万千瓦的杰曼克里克（German Creek）瓦斯发电项目。这个项目以英美煤炭公司的格拉斯特里（Grasstree）矿区的废瓦斯为原料进行发电，能源开发有限公司（Energy Developments Ltd）拥有该项目的产权并进行运作经营。杰曼克里克（German Creek）瓦斯项目每年可减少110万吨温室气体排放 – 相当于禁止25万辆汽车上路。

必和必拓集团的West Cliff矿区的矿井通风瓦斯利用项目（WestVAMP）应用MEGTEC公司发明的热力气流反应装置（MEGTEC Vocsidizer）。这将是世界上第一个完全使用煤矿瓦斯进行商业发电的示范项目。

澳大利亚政府通过“温室气体减排计划”和“澳大利亚煤矿瓦斯减排计划”（该计划旨在2008到2012年之间减少450万吨甲烷不稳定排放）支持这些技术项目的开发。

Australia's Coal Mine Methane Capability

Australia is a resource rich country with abundant coal reserves. Since 1984, Australia has been the world's largest exporter of black coal and we are currently the fourth largest producer behind China, USA and India.

Our extensive experience in coal mining has provided the foundation for Australia's Coal Mine Methane (CMM) industry. Our expertise ranges from the development and implementation of advanced directional drilling to ventilation air methane capture and use technologies.

Scientific breakthroughs include the VAMCAT (Ventilation Air Methane Catalytic Turbine) technology developed by Australia's CSIRO which is currently being trialled in China.

Australia is also home to some of the world's largest CMM projects, including the 32MW German Creek CMM power station. This project, fuelled by waste mine gas from Anglo Coal's Grasstree coal mine, will deliver up to 1.1 million tonnes per year reduction in greenhouse gas emissions – which is equivalent to taking 250,000 cars off the road.

BHP Billiton's West Cliff Ventilation Air Methane Project (WestVAMP) using MEGTEC Vocsidizer technology will be the world's first demonstration of commercial power generation solely from mine ventilation air.

The Australian Government is supporting the development of these technologies and projects through the Greenhouse Gas Abatement Programme and with the Australian Coal Mine Methane Reduction Programme which aims to reduce fugitive emissions by 4.5 million tonnes between 2008 and 2012.



澳大利亚填埋场甲烷气体开发利用的优势

澳大利亚填埋场甲烷气体开发利用方面有很多创新技术，尤其擅长产区勘察填图、填埋地监测和分析(如流量测量、项目地点情况调查、地下水取样)，采气，和发电机组系统集成。

填埋场甲烷气体产量预测的普遍困难是缺少对包括垃圾类型、填埋时间在内的，具体填埋场基本情况的了解和数据掌握。

近年来，澳大利亚通过实验室模拟产量预测数据，并与实际数据不断比较修正，来开发产量预测模型。

在这一领域，澳大利亚出现了众多新技术，包括气化技术，使用辅助性消化细胞来加速物质分解等。许多填埋场正在研究通过水循环来提高甲烷气体产量。

除了对填埋场甲烷气进行收集利用以外，许多直接利用废物来发电的创新技术也不断涌现。可利用的废物包括木头，下水道污物、甘蔗、农作物垃圾、林业废物、食品垃圾和有机物。在这些废物被填埋之前就对其加以分解利用。

澳大利亚拥有世界上最大的垃圾填埋发电公司之一。其场地规划和发电机设计方面的许多创新技术都居于世界领先地位。

澳大利亚率先使用“多场地系统”，该系统使一些临近的填埋场能够通过地下输气管线相连，并最终连接到发电厂。

他们开发出复杂的计算机模型，使用实际生产数据来不间断地跟踪显示发电情况。澳大利亚公司的业务不仅局限在澳大利亚，他们还在英国、美国、法国和中国有合作项目。

澳大利亚填埋场甲烷利用公司应用先进技术和经验，为用户提供从评估、模型、设计，到工程、建造、设备安装和管理等全方位服务。

澳大利亚开发出“封闭火焰清洁燃烧（Clean Burn Enclosed Flares）”技术，已接受二氧化碳单位减排（ERU）和碳排放交易的检验。

Australia's Strengths in Landfill Gas

Australia offers an innovative approach to landfill gas, with particular strength in LFG yield mapping, landfill monitoring and analysis (such as flow measurement, site conditions, groundwater sampling), gas extraction, and system integration from landfill to generator.

A common difficulty in LFG yield prediction is the lack of data and extensive knowledge about the characteristics of a particular landfill site, including types of waste, and the length of time it has been contained in the landfill.

In recent years, Australian research into the modelling of LFG yields has been carried out in laboratory investigations, and this data continues to be validated against data from actual larger-scale landfill sites.

A range of technologies is being demonstrated in Australia, including gasification, and use of digester cells to speed the decomposition process. Several landfill sites are looking at water recirculation to enhance gas generation.

In addition to direct LFG capture and use facilities, a number of innovative new projects that generate electricity from waste materials (including wood, sewage, sugar cane, crop waste, forestry waste, food waste and organic material) before they reach landfills, are being developed.

Australia has one of the largest LFG to electricity companies in the world and has pioneered many innovations in gas field development and generator design.

Australia has pioneered the multi-site system where a number of landfills in close proximity are connected by underground gas lines to a single power station.

They have developed sophisticated computer models to show the gas generation over time using actual production bore well data. Australian companies have developed large numbers of LFG facilities in Australia and around the world in countries like the United Kingdom, the United States, France and China.

Innovative Australian companies develop LFG projects that incorporate all facets of best practice from evaluations, desktop modelling, design, engineering, and manufacture of purpose built gas field components, installation and management.

Of note, Australia has developed Clean Burn Enclosed Flares, which have been independently audited for the production and verification of Emission Reductions Units and carbon credit trading.

澳大利亚为亚太地区提供油气和LNG

LNG在技术、经济效益和环境方面的优势使其成为全球能源的重要来源。澳大利亚拥有丰富的天然气资源和良好的安全供应记录，是亚太地区各经济体倚重的供应国。

澳大利亚LNG被认为是世界上具有社会责任感和环境责任感的工业。

全球对LNG的需求增长迅速。预计未来20年内，现有买家的LNG使用量和新市场对LNG的需求都会有所增加。

近年来，澳大利亚LNG生产企业与亚太经济体签定数目可观的长期供货合同，这一点更证明了澳大利亚是具有竞争力的、可靠的LNG供应者。

这些长期供货合同刺激了主要LNG生产基地的发展，并将进一步扩大澳大利亚在全球LNG市场的份额，提高LNG出口收入（目前为每年50亿澳元）占总出口收入的比重。

未来10年，澳大利亚LNG行业有能力吸引600多亿澳元对新项目的投资，为就业、地区发展，出口和政府财政收入作出长期的更加可观的贡献。

更多海上天然气气田的发现和煤层气开采量的增长，大大扩大了澳大利亚LNG行业的规模。

建立强大的、具有国际竞争力的LNG产业是澳大利亚联邦政府、州政府和企业界的一致愿望。

稳定的产业环境不仅保证了在吸引投资的同时保护环境，而且为发挥专业所长和保持良好的安全供气记录创造了条件。

澳大利亚政府致力于保持温室气体排放政策的确定性，并通过完善关税和税收政策进一步使LNG行业得到加强。

我们支持澳大利亚LNG企业努力寻求海外长期供气市场。

随着全球LNG需求量的增长，澳大利亚丰富的天然气资源和良好的供应记录必将继续为用户提供具有国际竞争力的、安全和清洁的能源。

Australian Oil & Gas - LNG for the Asia Pacific Region

The technical, economic and environmental advantages of liquefied natural gas (LNG) have made it a global fuel of choice. Abundant gas resources and an excellent record as a safe and secure supplier make Australia a preferred provider in the Asia Pacific region.

The Australian LNG industry has proven itself to be one of the most socially and environmentally responsible industries in the world.

Global demand for LNG is increasing dramatically. Over the next 20 years significant increases in consumption by existing buyers, as well as the opening of new markets are expected.

In recent years Australian LNG producers have secured prominent long-term deals in the Asia-Pacific region which reinforces Australia's credentials as a competitive and reliable supplier.

These long term deals which underpin major new LNG project developments will result in Australia achieving a greater share of the global LNG market, adding to the already \$5 billion per year that LNG contributes to Australia's export income.

The Australian LNG industry has the potential to attract in excess of A\$60 billion in new project investment over the next decade, providing significant long-term benefits in terms of employment, regional development, exports and government revenue.

Increasing numbers of offshore natural gas discoveries as well as the tapping of coal seam methane as the source of LNG export projects has broadened the base of the Australian LNG industry significantly.

The Australian, state and territory governments together with industry have a joint vision for a strong, internationally competitive LNG industry.

Our demonstrated technological expertise and track record for safe LNG delivery is reinforced by a stable operating environment that encourages investment while safeguarding environmental concerns.

The Australian Government has provided industry with certainty in respect of greenhouse policy and has implemented other policies to strengthen industry through improved customs and tariff regulations and taxation arrangements.

We have also given strong support to the efforts of the Australian LNG industry to secure long-term export markets for Australian gas.

As global demand for LNG increases Australia's abundant gas resources and excellent record as an LNG supplier will serve us well in providing safe, secure and clean energy on an internationally competitive basis.

澳大利亚贸易委员会为您服务

澳大利亚贸易委员会(简称澳贸委)是澳大利亚联邦政府的贸易促进机构, 专门致力于帮助澳大利亚企业向海外出口和投资。

澳贸委在中国(包括香港和澳门)有15家分支机构, 包括香港和澳门, 其在北京的机构也是澳大利亚驻华大使馆商务处。

在帮助澳大利亚企业的同时, 澳贸委还帮助中国的企业和政府部门采购源自澳大利亚的产品和服务。

例如, 澳贸委能够帮助您找到潜在的供货商, 提供新产品信息, 以及帮助您安排在澳大利亚其间的会议。

澳大利亚的采矿业在全世界居于领先地位, 涉及的行业包括勘探开发、采矿、矿物质加工和矿产品增值服务。

世界上最全的矿物研究和开发项目以及设备都在澳大利亚可以找到。

澳贸委能够帮助您与澳大利亚的矿业公司联系并找到潜在的合作伙伴。

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Austrade – At Your Service

Australian Trade Commission (Austrade) is the Australian Government trade promotion agency dedicated to help Australian companies export or invest overseas.

Austrade has 15 offices in China, including Hong Kong and Macau, and its office in Beijing is also the Commercial Section of the Australian Embassy in China.

In addition to providing services for Australian companies, Austrade also helps Chinese companies and government departments to source products and services from Australia.

For example, Austrade can help you identify potential suppliers, provide new products information or arrange meetings while you visit Australia.

Australian companies lead the world in terms of economic exploration, mining, mineral processing and adding value to mineral products.

The world's most extensive mineral research and development programs and facilities are in Australia.

Austrade can help you communicate with Australian companies and find your potential business partners.

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Methane to Markets

Partnership Expo

30 October - 1 November 2007

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www.industry.gov.au/m2m

