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中国中心2021主要成果及2022工作计划

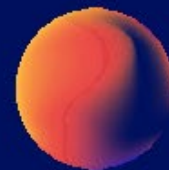
2021 Main Achievements and Work Plan for 2022 of ICE-China

中国国际卓越煤矿瓦斯治理中心主席
中国工程院院士

Chairman of ICE-CMM
Academician of CAE

金智新

Jin Zhixin





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1. 第一部分 中国中心2021年度工作成果
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第一部分 中国中心2021年度工作成果

Part I: Work Achievements in 2021



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- 1.中心能力建设 Capacity building
- 2.业务开展情况 Business conditions
- 3.推广“最佳实践” Promote "best practices"
- 4.中心工作需进一步完善 Some work needs to be improved

1.中心能力建设Capacity building



- 在瓦斯专家委员会指导下工作，积极参加瓦斯专家委员会组织的活动 Work is carried out under the guidance of the GOE, Participate in all activities organized by GOE

2021年3月3日，参加瓦斯专家委员会第十六届全体会议（视频），并向会议提交了中国中心年度工作报告
March 3, 2021, Attended 16th Session of GOE (on line), and delivery work report of ICE-China

2021年3月4日参加瓦斯专家委员会、全球甲烷行动倡议（GMI）煤矿小组委员会第十一次联席会议（视频）
March 4, 2021, Attended the Joint Meeting of UNECE GOE and GMI Coal Subcommittee

2021年9月27-28日在线参加波兰克拉科夫举办的“煤炭产业转型背景下的瓦斯管理”研讨会（视频），金智新主席向会议致贺辞，中国中心发布了题为“中国中心在行动”的推广最佳实践工作报告
Attended the work shop of “Methane in the Context of the Transition of the Coal Sector” in Cracow, Poland 27-28 Sep, 2021. Mr. Jin Zhixin delivered a congratulatory speech, and ICE-China made a work report “Aim at CO2 emissions peak and carbon neutrality, ICE-China in Action”



1.中心能力建设Capacity building



- 金智新先生等三位中国中心专家受到欧洲经济委员会的表彰 Three experts from ICE-China, including Mr.Jin , were commended by UNECE
- 与瓦斯专家委员会沟通顺，并于2021年6月完成了向瓦斯专家委员会第二笔7.5万美元的捐款 Keeping good communication with the GOE and completed its second donation of us \$75,000 in June 2021.



The experts responsible for creating and managing the work of the International Centres of Excellence on Coal Mine Methane in Poland and in China, namely:

- Mr. Lukasz Kropiewski,
- Mr. Janusz Jureczka,
- Mr. Piotr Kasza,
- Mr. Jacek Skiba,
- Mr. Jin Zhixin,
- Mr. David Creedy, and
- Mr. Beau Jia

were among the selected few.

An extended on-line event will be organized before the end of the year to recognize contributions from a wider spectrum of ECE's stakeholder communities.



KEY FIGURES OF ICE-CMM IN POLAND AND IN CHINA RECOGNIZED AT THE 30TH SESSION OF THE COMMITTEE ON

Efforts of key figures of ICE-CMM in Poland and in China recognized at the 30th session of the Committee on Sustainable Energy.

At the jubilee 30th session of the Committee on Sustainable Energy held on 22-24 September in Geneva, Switzerland the UNECE Executive Secretary, Ms. Olga Algayerova, honoured a narrow list of individuals for their outstanding work and contributions to the work of the Committee over the last thirty years.



1.中心能力建设Capacity building



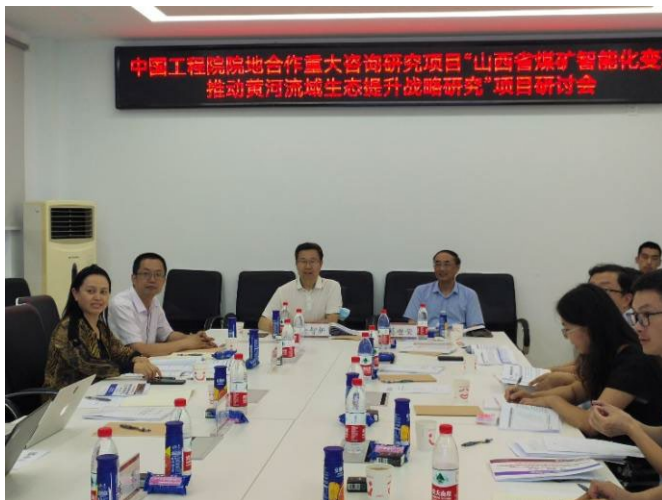
- **金智新院士年度研究成果丰富 Annual project research achievements by Academician Jin Zhixin**

1.完成中国工程院研究项目《山西省废弃矿井资源开发利用战略研究》的第一子课题《山西省废弃矿井资源调查研究》
Completed the first sub-project "Investigation and Research on Abandoned Mine Resources in Shanxi Province" of the Research project of Chinese Academy of Engineering "Research on The Development and Utilization Strategy of Abandoned Mine Resources in Shanxi Province"

2.完成中国工程院项目《煤炭能源与新能源协同利用发展战略研究》
Completed the project of Chinese Academy of Engineering "Research on the Development Strategy of Collaborative Utilization of Coal Energy and New Energy"

3.开展矿山掘进智能化升级改造研究，主持设立“矿山掘进及辅助运输智能化实验室”
Carried out research on intelligent upgrading and transformation of mine tunneling and presided over the establishment of "Intelligent Laboratory of Mine Tunneling and Auxiliary Transportation".

4.开展煤层气抽采智能化研究，设立“智能化煤层气抽采实验室”
To carry out intelligent research on CBM extraction, set up "Intelligent CBM Draianeg Laboratory"



1.中心能力建设Capacity building



- 完成政府的年度考核工作 Pass the government's annual acceptance
- 召开年度理事会 Took the annual board meeting
- 努力保持财务状况良好 Try the best to keep financial condition good



2. 业务开展情况 Business conditions

- 与太原理工大学院士团队共同完成“能源革命与减碳化发展最佳实践国际论坛”的筹备工作；因疫情影响论坛的举办时间由2021年下半年拟变更到2022年上半年举办 With the academicians team of Taiyuan University of Technology, completed the preparatory work of "International Forum on Best Practices of Energy Revolution and Decarbonization Development"; Due to the epidemic, the forum will be postponed from the second half of 2021 to the first half of 2022.
- 推广智能矿山供电系统优化新技术 Promoting the new technology of intelligent mine power supply system







邀请函
Letter of Invitation

能源革命与减碳化发展最佳实践国际论坛
**International Forum on Energy Transition and Decarbonization
Development Best Practices**

2021年8月14日 8:30~12:30 中国·山西·太原·线上
August 14, 2021 8:30 ~ 12:30 China · Shanxi · Taiyuan · Online

尊敬的戴维·科瑞迪博士：
Dear Dr David Creedy,

我们非常荣幸地邀请您出席由太原理工大学和联合国欧洲经济委员会煤矿瓦斯专家委员会共同主办，由山西卓越瓦斯研究中心、北京辛迪克清洁能源技术服务有限公司联合承办的《能源革命与减碳化发展最佳实践国际论坛》。

It is our great pleasure to invite you to attend the International Forum on Energy Transition and Decarbonization Development Best Practices. The forum is jointly hosted by Taiyuan University of Technology and the UNECE GoE for CMM and Just Transition, and organized jointly by ICE-CMM in China and Beijing Sindicatum Clean Energy Technology and Services Co., Ltd.

本次论坛旨在推动能源革命，推动中国实现“30·60”双碳目标，寻求实体产业减碳化发展路径，共享实现碳达峰碳中和的最佳实践。

The purpose of this forum is to promote the energy revolution, push China to achieve the "30·60" double carbon target (achieve peak emissions by 2030 and carbon neutral by 2060), pursue the development path of carbon reduction in industry and share the best practices in expediting these targets.

本次论坛将于北京时间2021年8月14日8:30-12:30在中国山西太原丽华大酒店举行，由于受COVID-19疫情影响，论坛将以线上方式举办。

The forum will be held at Lihua Hotel, Taiyuan, Shanxi at 8:20 to 12:30 Beijing time, August 14, 2021. Due to the COVID-19 epidemic, the forum will be held online over a local network.

非常感谢您的支持
Thank you very much for your distinguished support.

真诚的
Sincerely
金智新
Mr. Jin Zhixin



山西卓越瓦斯研究中心主席
太原理工大学学术委员会主任
联合国欧洲经济委员会煤矿瓦斯专家委员会副主席
Chairman of International Center of Excellence on Coal Mine Methane in China
Director of Academic Committee of Taiyuan University of Technology
Vice-Chairman, GoE of CMM, United Nations Economic Commission for Europe
2021年6月29日 June 29, 2021

2. 业务开展情况 Business conditions

- **开展碳达峰碳中和服务业务 Developing the service to advise on carbon peak and carbon neutrality**

1.与北京辛迪克公司联合启动了“西山煤电（集团）有限责任公司实现双碳目标减排场景控制措施及低碳发展路径研究”前期工作，预计项目将于2022年上半年实施
 Research on "Xishan Coal and Power (Group) Co., Ltd. to achieve dual carbon emission reduction scenario Control measures and low-carbon Development Path " was jointly launched with Beijing Sindicatum. The project is expected to be implemented in the first half of 2022.

2.为煤炭产出区域政府提供“双碳”服务：中心启动了《沁源县“双控”“双碳”协同推动经济低碳发展快速增长“十四五”发展规划》的编制工作，目前正在开展项目建议书编制等前期工作

Provide "double carbon" services for the governments of coal-producing regions: The center has started the compilation of the "Fourteenth Five-year Development Plan" for Qinyuan County's "Double control" and "Double Carbon" to promote the Rapid growth of low-carbon economic development, and is currently carrying out the preparation of project proposals and other preliminary work



3. 推广“最佳实践” Promote "best practices"

- 推动煤矿瓦斯抽采能力建设: 山西国源煤层气综合利用工程技术股份有限公司是煤层气(煤矿瓦斯)抽采专业化公司, 2021年完成瓦斯抽采钻孔进尺55万米, 为煤矿建设瓦斯抽采能力1.36亿m³/a, 被山西省评定为专精特新“小巨人”企业
- Promote gas drainage ability: Guoyuan Company is a professional company of CMM Drainage, completed 550000 meters borehole in 2021, for the construction of coal mines the gas capture capacity of 136 million m³ / a, is in Shanxi Province for specialization, the new "little giant" enterprises.
- 推进瓦斯利用技术提升: 中心理事单位南京碳环生物质能源有限公司是瓦斯、沼气、化工尾气综合利用气体预处理的专业化公司, 2021年, 南京公司制造完成瓦斯/沼气/VOCs回收利用装置45台/套, 向社会提供温室气体减排能力18万吨/a
- Promote gas utilization technology :Director unit of Nanjing Carbon Recycle Biogas Thechnology Co., LTD is a CMM, biogas, chemical comprehensive utilization of tail gas pretreatment of specialized companies. In 2021, the compny manufactured gas/gas/carbon ring VOCs recycling device / 45 sets, for greenhouse gas reduction capacity of 180000 tons/a
- 开发乏风利用新项目, 提高瓦斯利用率: 兴边富民北京清洁能源技术有限公司是煤矿瓦斯综合利用专业化公司, 2021年在保持桑掌乏风氧化发电供热项目正常运行的基础上, 加大潞安集团古城中央风井乏风氧化发余热利用新项目开发建设力度
- Development new VAM projects, and improve the gas utilization: Fortman co., LTD is a professional company of VAM oxidation. 2021 on the basis of normal operation of Sangzhang VAM project, increasing development on the central ventilation shaft VAM project in Gucheng mine, LuAn Group



3. 推广“最佳实践” Promote "best practices"

- **项目改造，提高清洁能源利用效率：中国中心与北京辛迪克清洁能源技术有限公司联合启动了“华晋焦煤瓦斯发电厂二期工程提质增效技术研究及应用”工作，项目将于2022年下半年实施，预计项目投产运营后可提高发电效率15%**
- **Improve the utilization efficiency of clean energy: Jointly launched the Research and application of "Huajin Coking CMM plant phase II project efficiency improvingf" . project will implement in the second half of 2022, 15% is expected to improve the efficiency**
- **拓展碳减排渠道：中心理事单位文龙中美环能科技股份有限公司是煤矿瓦斯、工业余热、风源/地源热回收利用专业化公司。2021年，文龙中美环能科技股份有限公司设计建设了风源/地源热回收利用装置5项，供热装机能力6200千焦，为社会提供二氧化碳减排能力10360吨/a**
- **Expand the paths of carbon emission reduction: Wenlong Zhongmei Co.,Ltd is a professional company specializing in the recovery and utilization of coal gas, industrial waste heat and air/ground source heat. In 2021, the company designed and constructed 5 wind/ground source heat recovery and utilization devices, with installed heating capacity of 6,200 kilojoule and carbon emission reduction capacity of 10,360 tons /a**





4. 中心工作需进一步完善 Some work needs to be improved

- 需与大型能源企业建立更广泛的合作关系 Build broader partnerships with large energy companies
- 设立时间较短社会影响力需不断提高 Need to increase the social influence
- 工作经验不足，需借鉴其他非盈利组织的成功经验 Learn from the success of other NGOs
- 消除新冠疫情不断反复带来的不确定性，需更加努力 To eliminate uncertainties caused by repeated COVID-19 outbreaks



第二部分 中国中心未来时期工作重点

Part II: Key work in the future



- **1.未来时期工作背景Background of Future Work**
- **2.未来工作重点The key work for future**

1. 未来时期工作背景 Background of Future Work

- **背景一：中国实现碳达峰碳中和是一场广泛而深刻的经济社会系统性变革**
- 1.特点
- 政府主导，时间短，任务重
- 2.影响
- 将引发经济社会广泛而深刻系统性变革；生产、交换、消费方式将产生重大变化
- 3.挑战
- 表现为三高一短。一是高碳的能源结构；二是高碳的产业结构；三是发展经济硬需求带来高能源消费；一短是无论是碳达峰还是碳中和所允许的时间都大大短于发达国家
- 4.机遇
- 巨大的企业碳服务市场需求和政府碳服务采购

- **Background 1: China's carbon reach peak carbon neutrality is an extensive and profound economic and social systemic change**
- **1. Characteristics : government-led, time is short, heavy task**
- **2. Influence: Will lead to economic and social extensive and profound systemic change. Production, exchange and consumption patterns will have significant change**
- **3.Challenge: high carbon energy structure; high carbon industrial structure; increase energy consumption; time is much shorter.**
- **4. The opportunity:**
- **The huge demand of enterprise carbon service market and government carbon service procurement**



1. 未来时期工作背景 Background of Future Work



背景二：中国煤炭重点产出区瓦斯抽采利用减排意义大

- 1.山西省煤层气资源丰富
- 2020年底，山西省煤层气累计探明地质储量达1.06万亿立方米，约占中国总探明地质储量的89.83%。
- 2.山西省煤层气抽采产量大
- 2020年山西煤层气产量达到77亿立方米，占全国的75.27%。
- Background 2: Gas Capture and utilization in key coal production areas of China has great significance for emission reduction
- 1.Rich CBM/CMM resources in Shanxi Province,
- By the end of 2020, the accumulative proven geological reserves of coalbed methane in Shanxi reached 1.06 trillion cubic meters, accounting for 89.83 percent of China's total proven geological reserves.
- 2. Large amount of CBM/CMM capture in Shanxi Province
- in 2020, shanxi CMM production reached 7.7 billion cubic meters, accounting for 75.27% of the whole country.

1. 未来时期工作背景 Background of Future Work



- 3.开发废弃矿井瓦斯资源意义重大
- --山西有开发利用价值的煤炭采空区（废弃矿井）面积约2052平方公里，预测残余煤层气资源量约726亿立方米。山西省煤矿数量已经从1997年最高峰的10971处，减至2018年的978处。
- --面临的技术难题：一是废弃矿井采空区煤层气资源赋存规律不清，资源评价困难；二是地面抽采最佳的抽采井位和抽采层位不明；三是废弃矿井采空区工程条件复杂；四是抽采过程中存在安全隐患。
- --山西省废弃矿井瓦斯抽采利用减排现状
- 目前，废弃矿井采空区已累计施工抽采井100余口，抽采利用煤层气1.28亿立方米，碳减排量192万吨。
- 3. Great significance to develop AMM
- -- There are 2,052 m2 of coal goaf (abandoned mines) that are valuable for development and utilization in Shanxi, and the estimated amount of residual CBM resources is about 72.6 billion m3. The number of coal mines in Shanxi Province has dropped from 10,971 in 1997 to 978 in 2018.
- -- Technical problems: First, the AMM resources is not clear, and resource evaluation is difficult; Second, the best well location and level are unknown. Third, the engineering conditions of abandoned mine are complex; Fourth, there are safety risks in the cature process.
- --- Current statues of AMM drianage in Shanxi
- At present, there are more than 100 wells for AMM , and 128 million m3 AMM draianegd and utilization, 1.92 million tons of carbon emissions reduction.

2. 未来工作重点 The key work for future



- 为能源企业低碳转型服务
- Low-carbon transformation services for energy enterprises
- 为能源产出区域政府服务
- Serving regional governments of energy region
- 关注发达经济体低碳发展成功经验 Introduce successful development experience of carbon neutralization from Advanced economies





第三部分 中国中心2022年工作计划

Part III: Work Plan for 2022

● 2. 2022年工作计划Work Plan for 2022

- 在瓦斯专家委员会的指导下开展工作，积极参加瓦斯专家委员会组织的各项活动

Work is carried out under the guidance of the GOE and take an active part in various activities organized by GOE in 2022.

- 能力建设Capacity Building:

扩大与大型能源集团的合作，寻求社会更广泛的支持

Expand cooperation with large energy groups and seek more social support

● 2. 2022年工作计划 Work Plan for 2022

● 业务工作计划 Business plan

---组织召开“能源革命与减碳化发展最佳实践国际论坛” Organize and hold "International Forum on Best Practices of Energy Revolution and Carbonization Development"

---为能源企业提供碳盘查服务，设置低碳发展路径 Provide carbon inventory service for energy enterprises and set low-carbon development path

---为能源产出区域政府提供咨询服务，编制低碳发展规划 Provide consulting services to energy-producing regional governments and prepare low-carbon development plans

---推广乏风瓦斯发电余热综合利用技术 Promote waste heat comprehensive utilization technology of VAM power generation

---推动风源/地源热回收项目开发 Promote the development of air/ground source heat recovery projects

● 2. 2022年工作计划Work Plan for 2022

---推动 “华晋焦煤瓦斯发电厂二期工程提质增效技术研究及应用项目” 实施
Promote the implementation of "Huajin Coking coal Gas Power Plant Phase II Project quality and Efficiency Improvement Technology Research and Application Project"

---推广 “全闪电雷电定位监测预警系统技术” Promote "All-lightning location Monitoring and Early Warning System Technology"

---推广 “高压配电系统过电压保护与监测系统技术” Promotion of "High voltage Distribution System overvoltage Protection and Monitoring System Technology"

---推动煤炭行业安全供电标准修订Promote the revision of safe power supply standards for the coal industry

---参与 “GB 21522-2008煤层气 (煤矿瓦斯) 排放标准 (暂行) ” 标准修订
Participated in the revision of "GB 21522-2008 CBM (Coal Mine gas) Emission Standard "



第四部分 工作建议

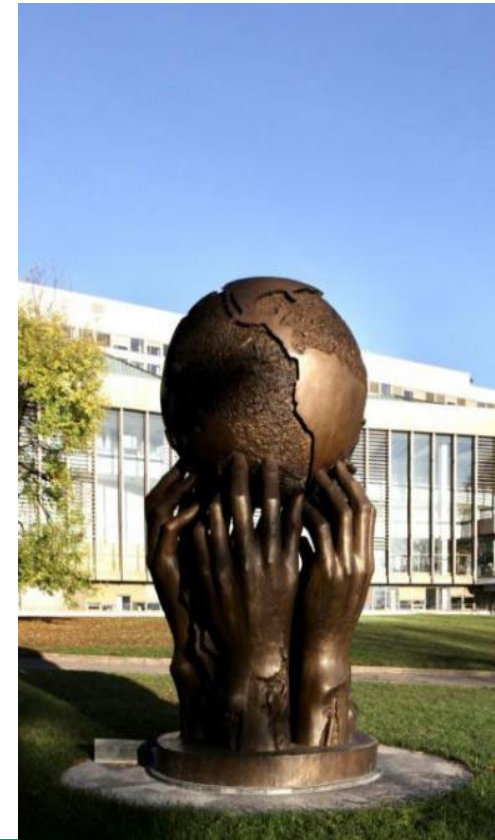
Part IV Work Suggestion

● Work Suggestion

- 1. 融入中国“双碳”工作 Integrate into China's dual carbon work

瓦斯专家委员会可借鉴欧洲能源企业、制造业低碳发展、转型发展的成功经验，透过中国中心引导中国传统能源企业实现双碳目标，形成面上的转型方向技术指引和点上的转型案例突破，与中国中心形成互动

Learn from the successful experience of low-carbon development and transformation development of European energy enterprises and manufacturing industries in Europe, guide Chinese traditional energy enterprises to achieve dual carbon goals through ICE-China and form interaction between GOE and ICE-China.



● Work Suggestion

- 2.做中国实现“双碳”目标的志愿者Volunteer to achieve China's "dual carbon" goal

瓦斯专家委员会可通过中国中心为中国地方政府和实体产业提供低碳发展、社会经济转型过渡的技术引进、案例追踪、技术咨询等服务，助力中国双碳目标实现，做中国重点能源产出区域低碳发展、公平转型的志愿者

Through ICE-China, GOE provides the Chinese government with services such as technology introduction, case tracking and technical consultation for the low-carbon development of industry and the associated social and economic transition to help realize China's dual carbon goals, low-carbon development and just transition.





谢谢！ THANKS