

中国HFC-23控排工作进展

China's Work Progress on HFC-23 Emission Control

生态环境部对外合作与交流中心 (FECO/ MEE)



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一、背景 Background

1. 国家应对气候变化政策下的HFC-23减排

HFC-23 emission mitigation within national strategy for climate change

➤ 2005-2014年，中国10家HCFC-22生产企业开展CDM项目，累计销毁HFC-23约4.1万吨，减排6.1亿吨CO₂当量。

In 2005-2014, 10 HCFC-22 manufacturers in China have participated in CDM programs, and destroyed 41,000 tonnes HFC-23 (610 million CO₂-equivalent tonnes) in total.

➤ 2015年5月，国家发改委发布《关于组织开展氢氟碳化物处置相关工作的通知》，对符合资格的HCFC-22生产企业2014-2019年HFC-23销毁予以财政补贴。

In May 2015, NDRC issued the notification on HFCs disposal, and fiscal subsidies were paid for HFC-23 destruction to qualified HCFC-22 manufacturers in 2014-2019.



一、背景 Background

- 2014-2019年，利用国家财政资金累计销毁HFC-23约6.53万吨，减排9.66亿吨CO₂当量。

In 2014-2019, China has destroyed 65,300 tonnes HFC-23 (966 million CO₂-equivalent tonnes) with the state financial funds.

- 2021年3月，生态环境部发布《关于加强企业温室气体排放报告管理相关工作的通知》、《企业温室气体排放报告核查指南（试行）》，将HFC-23销毁与排放纳入温室气体排放报告的政策管理。

In Mar. 2021, MEE issued the policy and verification guide regarding enterprise report on greenhouse gas emission, which include HFC-23 destruction and emission.



一、背景 Background

2. 中国正式加入《基加利修正案》

China became a Party of the Kigali Amendment

- 2021年9月15日，《蒙特利尔议定书<基加利修正案>》对中国正式生效。

Kigali Amendment has been taken effect in China since 15th Sep. 2021

议定书对副产HFC-23的管控要求：

- 从2020年1月1日起，每处HCFCs或HFCs生产设施产生的HFC-23应该采用议定书核准的技术在当年尽可能地被销毁。

In each twelve-month period since 1 Jan. 2020, HFC-23 emissions generated in each production facility that manufactures HCFCs or HFCs should be destroyed to the extent practicable using technology approved by the Parties.

- 缔约方应向臭氧秘书处报告副产HFC-23年度排放量等相关数据。

Each party shall provide to the Secretariat statistical data on its annual emissions of HFC-23 per facility.



一、背景 Background

3. 中国HFC-23副产和处置现状

HFC-23 generation and destruction situation in China

- 主要副产来源：18家HCFC-22生产企业

Main sources of generation: 18 HCFC-22 manufacturers.

- 17家企业进行焚烧，1家企业无处置设施（全部对外销售），总处置率约96%

17 enterprises carry out incineration, and 1 enterprise has no disposal facility (all for sales), and the total disposal rate is about 96%

- 3家企业销售副产HFC-23，销售的HFC-23少量作为原料使用，大多用于电子刻蚀等用途

Three enterprises have HFC-23 sales. A few of HFC-23 is sold for feedstock use, and most is for controlled use such as electronic etching.



二、HFC-23 控排工作进展 Work Progress

1. 加强HFC-23控排相关研究

Intensify the research on HFC-23 emission control

- 科技部国家重点研发计划：公约受控卤代烃减排成效评估和预测研究项目（北京大学，2020年）

National key research and development program of MST: The evaluation and forecast research of emission reduction of the controlled halogenated hydrocarbon (Peking University, 2020)

- 中国履行《基加利修正案》减排HFC-23对策研究项目（北京大学、生态环境部对外合作与与交流中心，2021年）

Research on HFC-23 emission reduction solutions for Kigali Amendment implementation of China (Peking University & FECO, 2021)



二、HFC-23 控排工作进展 Work Progress

2. 加快ODS和HFC监测预警能力建设

Accelerate the capacity building of monitoring and early warning of ODS and HFC

- 成立国家ODS监测专家委员会，组建联合专家团队

Establish national ODS monitoring experts committee and a joint experts team

- 组织国内有关研究机构研制满足高灵敏度的大气ODS浓度监测设备

Organize relevant domestic research institutions to develop high sensitivity atmospheric ODS concentration monitoring equipment

- 2021年开始建设ODS监测站点

ODS monitoring stations are under construction since 2021



二、HFC-23 控排工作进展 Work Progress

3. 开展HFC-23副产情况统计和核查

Carry out statistics and verification of HFC-23

- 2021年初，开展包括HFC-23副产量和处置量的2020年度含氟气体统计。

Complete the fluorine-containing gas statistics including HFC-23 generation and disposal of the year 2020.

- 2021年7-8月，受生态环境部大气司委托，对外合作与交流中心组织第三方对18家HCFC-22生产企业开展2020年度HFC-23副产和处置情况核查。

From July to August 2021, on behalf of the Atmospheric Department of MEE, FECO organized a third party verification on the generation and destruction situation of HFC-23 of the year 2020.

- 2021年11月，召开HFC生产和副产企业核查情况通报会议，对企业副产HFC-23控排提出技术要求。

In Nov. 2021, FECO held a meeting to circulate the verification results to the enterprises, and stress the requirements for the emission control of HFC-23.



二、HFC-23 控排工作进展 Work Progress

4. 制定HFC-23控排政策

Issue policy on HFC-23 emission control

- 2021年9月10日，生态环境部发布《关于控制副产三氟甲烷排放的通知》，提出管控要求，强化企业履约主体责任。

On 10th Sep. 2021, MEE issued the notification on HFC-23 emission control, to clarify the requirements of HFC-23 management and enhance the enterprises' principal responsibility of convention implementation.

- ① **2021年9月15日起**，HCFC-22或HFC生产过程中副产的HFC-23**不得直接排放**。

Since 15th Sep. 2021, HFC-23 generated in HCFC-22 or HFC production facility should not be discharged directly.

- ② 除作为原料和受控用途使用外，副产HFC-23 应采用**缔约方核准的技术尽可能销毁**。

Except for the feedstock and controlled uses, HFC-23 should be destroyed to the extent practicable using technology approved by the Parties.



二、HFC-23 控排工作进展 Work Progress

- ③ 企业应建立HFC-23副产和销毁设施运行台账，对HFC-23产生量、销毁量、储存量、使用量、销售量等进行监测和计量，并按有关规定（另行发布）报送数据。

Enterprises should establish standing books of HFC-23 generation and destruction facility operation, to keep monitoring and measuring the amount of HFC-23 generation, destruction, storage, usage and sales, and report the data according to related rules (to be issued separately).

- ④ 企业应配套HFC-23存储设施或采用其他设施，避免在紧急情况时直接排放HFC-23。在HFC-23回收、存储和销毁设施无法正常运行时，应停止相应HCFC-22或HFCs的生产，防止HFC-23直接排放。

Enterprises should establish HFC-23 storage facility or take other measures, to avoid direct emission of HFC-23 in case of emergency. The production of HCFC-22 or HFC should be stopped in case that HFC-23 recycle, storage and destruction facilities could not work properly.

- ⑤ 企业应加强装置、设备的维护管理，防止HFC-23泄漏和排放。

Enterprises should enhance the maintain and management of facilities, to avoid the leak or emission of HFC-23.

- ⑥ 鼓励企业降低HFC-23副产率，开发推广HFC-23原料用途的资源化利用技术。

Encourage the enterprises to reduce generation rate of HFC-23 as by-product, and develop the technologies of HFC-23 conversion for feedstock use.



三、下一步计划 Next Steps

1. 健全完善副产HFC-23控排政策法规

Proceed with the policies and regulations on HFC-23 emission control

- 制订并发布《副产HFC-23计量、监测和数据报送技术指南》

Issue the technical guide for measurement, monitoring and data submission of HFC-23 as by-product .

- 对受控用途HFC-23实施严格管控

Take strict management and control of HFC-23 for the controlled use.

2. 建设ODS和HFC大气监测评估体系

Establish ODS and HFC atmospheric monitoring and evaluation system

- 计划于2022年开展ODS和HFC监测工作

ODS and HFC monitoring is to be implemented from 2022.



三、下一步计划 Next Steps

3. 加快HFC-23资源化利用，鼓励企业自主减排

Accelerate the resource utilization of HFC-23, and encourage enterprises to achieve voluntary emissions mitigation

- 鼓励企业开展HFC-23转化技术研发与推广

Encourage R&D and promotion of HFC-23 conversion technologies.

- 探索将HFC-23纳入碳排放交易市场机制，促进企业自主减排

Explore the integration of HFC-23 into the carbon market mechanism, as an incentive approach to voluntary emissions mitigation.

Thank you!