2021 Ozone2Climate Technology Roadshow and Industry Roundtable
2021 臭氧气候技术路演及工业圆桌会议

7-9 April 2021
2021 年 4 月 7 -9 日

Shanghai New International Expo Centre, China
中国 • 上海新国际博览中心

Concept Note

Background
背景

The "Ozone2Climate" (O2C) Technology & Roadshow is a flagship initiative of the UN Environment Programme OzonAction established to promote ozone and climate technologies through knowledge and information exchange via a global and/or regional platform. Since its inception in 2011, it has been organized all around the world. UN Environment Programme, United Nations Development Programme (UNDP), Foreign Economic Cooperation Office (FECO) & China Refrigeration and Air-Conditioning Industry Association (CRAA) have been continuously organizing the Ozone2Climate Roadshow and Roundtable in China from 2012 with its last edition held in Chongqing in 2020. The China Ozone2Climate Roadshow and Industry Roundtable has developed into one of the major global government-industry information exchange platforms for ozone and climate friendly technologies used across various HVAC&R applications.

联合国环境臭氧行动创办的"臭氧气候"（O2C）技术路演是一个旗舰计划，旨在利用全球或者区域的平台通过知识和信息共享推广臭氧气候技术。自 2011 年创办以来，其已在世界各地举办。联合国环境规划署（UN Environment Programme）、联合国开发计划署（UNDP）、中国生态环境部对外合作与交流中心（FECO）和中国制冷空调工业协会（CRAA）自 2012 年起已连续多年在中国组织举办臭氧气候技术路演和圆桌会议，最近一次是 2020 年在中国重庆举办的。中国臭氧气候技术路演和圆桌会议已发展成为全球制冷、空调和暖通行业（HVAC&R）关于臭氧气候友好技术进行政府—行业信息交流的最主要的平台之一。

The Asia-Pacific region is the largest producer and consumer of HCFCs (hydrochlorofluorocarbons), and China accounts for over 70% of global production and consumption of these chemicals. HCFCs are primarily used as refrigerants and foam blowing agent in the Heating, Ventilation, Air-Conditioning and Refrigeration (HVAC&R) sector. Asia Pacific region, in particular China, is the largest manufacturer of HVAC&R equipment and also one of the biggest markets. HCFCs are ozone depleting substances (ODS) and are controlled under the Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol).
亚太地区是最大的 HCFCs（氯氟烃）生产和消费地区，以中国为主，HCFCs 类化学品的生产和消费占全球的 70%。HCFCs 主要用于制冷、空调和暖通（HVAC&R）行业的制冷剂和发泡剂。亚太地区特别是中国，是最大的制冷、空调和暖通设备制造基地，

同时也是最大的市场之一。由于 HCFCs 具有消耗臭氧层的潜力（ODP），其已被列入《蒙特利尔议定书》的管控范围。

In September 2007, the Article-5(A5) Parties to the Montreal Protocol agreed for an accelerated phase-out schedule for HCFCs, wherein the baseline freeze on production and consumption of HCFCs started from 1 January 2013 and will be completely phased-out by 2040. As of 2018, A5 Parties have reduced 10% of their HCFCs consumption & production from their respective baseline levels and are preparing to meet a reduction target of 35% by 2020. Some A5 Parties have also initiated or started their HCFCs phase-out management plan (HPMP) to meet the reduction obligations of 67.5 % by 2025, and subsequently a complete reduction by 2030 with "a servicing tail" until 2040.
2007 年 9 月，《蒙特利尔议定书》第 5 条款（A5）国家达成了 HCFCs 加速淘汰计划，即到 2013 年 1 月 1 日将 HCFCs 的生产和消费量冻结在基线水平，且到 2040 年将全部淘汰。截止 2018 年，A5 国家已经淘汰了 HCFCs 生产和消费基线水平的 10%，而且正在努力完成到 2020 年削减 35%的目标。其中一些 A5 国家也已开始他们的 HCFCs 淘汰管理计划（HPMP）以实现 2025 年淘汰 67.5%的目标，以及到 2030 年保留一小部分消费量供维修行业直至 2040 年全部淘汰的任务。

HFCs (hydroflourocarbons) are the most commonly used alternatives to HCFCs and do not have any ozone depletion potential (ODP), but most HFCs are potent climate pollutants with high global warming potential (GWP). Decision XIX/6 of the Meeting of the Parties called for efforts "To minimize environmental impacts, in particular impacts on climate" while phasing out HCFCs, however, transitioning from HCFCs to ozone and climate friendly technologies poses some technical and commercial challenges depending on the application. In 2016, the 28th Meeting of Parties to the Montreal Protocol held in Kigali agreed to amend the Protocol to phase-down HFCs due to the common concerns of uncontrolled growth of HFCs that could risk reversing the climate benefits of ODS phase-out under the protocol, and further contribute to climate change. The Kigali Amendment was achieved through several years of negotiations and unremitting efforts of the Parties, industries and relevant stakeholders.
HFCs（氢氟烃）是 HCFCs 最常见的替代物，其 ODP 为 0；但由于大部分 HFCs 具有高 GWP（全球变暖潜值），因此是潜在环境污染物。缔约方会议第 19/6 号决议号召在 HCFCs 淘汰过程中努力"减少环境影响尤其是气候影响"。然而在从 HCFCs 向臭氧气候友好技术转化的过程中，许多应用领域遇到了一些技术和商业方面的严峻挑战。2016 年，在基加利召开的第 28 届缔约方大会上，由于担心不受控 HFCs 的迅速增长会威胁到《蒙特利尔议定书》淘汰 ODS 物质而取得的气候效益，而进一步恶化气候变化问题，缔约方达成了旨在削减 HFCs 的修正案。这项修正案是在缔约方、工业界和利益相关方多年的谈判和不懈努力下达成的。

The Kigali Amendment provides a clear market signal to Parties and the industry on HFC phase-down targets that is expected to be achieved by 2047. The Kigali Amendment also provides flexibility to the Parties in choosing their strategy and alternate technologies to meet the compliance requirement. According to the Kigali Amendment compliance schedule, developed countries need to phase down HFCs from 2019; A5 Group 1 countries needs to freeze the consumption of HFCs by 2024; and A5 Group 2 countries needs to freeze their HFC consumption by 2028. By 2047, the consumption and production of HFCs in every country cannot exceed 15-20% of its baseline level. The Kigali Amendment is considered a major achievement of the international community by addressing and putting in place control measures to limit the consumption and production of high GWP HFCs to address climate

change challenges.
基加利修正案向各缔约方和工业界给出了明确的信号，到 2047 年实现 HFCs 削减目标。基加利修正案也为各缔约方选择不同的削减战略和替代技术以实现履约目标提供了灵活机制。根据基加利修正案的时间表，发达国家将从 2019 年开始削减 HFCs，一部分发展中国家要在 2024 年冻结 HFCs 的消费量，另一部分发展中国家在 2028 年实施冻结。到 2047 年，各国的 HFCs 消费量不得超过其基线水平的 15-20%。基加利修正案的达成是国际社会应对气候变化问题上的一个主要的成果，其通过实施管控措施限制高 GWP 值 HFCs 物质的消费和生产以应对气候变化。

HFCs and their blends such as HFC-134a, R-410A, R-407C, R-404A etc. are widely used refrigerant technologies in well-established HVAC&R equipment and materials. The ozone and climate friendly alternatives to these commonly used HFCs are mostly lower GWP HFCs, HFOs (unsaturated HFCs), hydrocarbons (HC), ammonia (NH_3) and carbon dioxide (CO_2). The transition to such ozone and climate friendly alternatives depends on the applications and may have technical and commercial challenges such as lack of cost effective supply chains for the manufacture of the final cooling products, policy/regulation barriers due to the flammability, toxicity, and high working pressure of the alternatives. The Kigali Amendment has provisions for the Parties to explore their strategies and look into sector-based approaches and technology choices. These provisions for HFCs phase-down in Kigali Amendment cover areas such as:
HFCs 例如 HFC-134a, R-410A，R-407C，R-404A 等都是被广泛应用于制冷空调设备中国的成熟制冷剂技术。而那些常用于替代这些 HFCs 的臭氧气候友好技术大部分是低 GWP 值的 HFCs、HFOs（不饱和 HFCs）、碳氢（HC）、氨（NH3）和二氧化碳（CO2）。向臭氧气候友好替代物质过渡取决于实际应用领域而且面临技术和商业挑战，例如对于制造终端产品的制造商缺乏经济的供应链，替代制冷剂的可燃性、毒性、高工作压力等造成了政策法规障碍。基加利修正案对其缔约方探索应对策略，研究不同行业的解决方案和技术选择都有条款规定。基加利修正案中 HFCs 削减的规定覆盖了如下领域：

- High Ambient Temperature Exemptions 高环境温度豁免
- Safety Standards 安全标准
- Energy Efficiency 能效
- Servicing Sector Capacity Building 维修行业能力建设
- Conversion Projects in Refrigeration &Air Conditioning (R&AC) Manufacturing and Refrigerant Production 制冷空调生产及制冷剂产品转换项目
- Destruction Technologies 销毁技术

The Kigali Amendment has already entered into force since 1 January 2019 for the countries that ratified the Amendment. Many countries are consulting with their key industries, line ministries, customs, importers, servicing sector and other relevant stakeholders to prepare for the ratification and/or implementation of the Kigali Amendment. The role of information dissemination, awareness and knowledge sharing has played a critical role in the success of the Montreal Protocol and its journey towards ozone and climate friendly technology transition.
基加利修正案对于已经批准的国家于 2019 年 1 月 1 日起正式生效。许多国家正在同他们的关键行业、工业部门、消费者、进口商、制冷维修行业和其他相关利益方进行磋商，为基加利修正案的签署和/或实施做准备。信息传播、认知和知识分享在《蒙特利尔议定书》的成功及其向臭氧气候友好技术转型的过程中发挥了关键作用。

China's Refrigeration and Air-Conditioning Sector
中国制冷空调行业

China's R&AC industry currently accounts for more than 60% of national HCFCs consumption. Under the HCFC Phase-out Management Plan (HPMP) Stage-I, China R&AC sector has successfully complied with the target of reducing HCFC consumption by 10% from its baseline level by 2015. The HPMP Stage-II for industrial and commercial refrigeration/air conditioning sector (ICR), room air conditioning sector (RAC), refrigeration servicing sector (RSS) were approved at the 77th Meeting of the Executive Committee in November 2016. In 2020, China has updated the second-stage industry plan for 2021-2026. The main applications under the ICR sector HCFC phase-out were: unitary air conditioner, freezer, cold storage & condensing unit, and water chillers (heat pump). The servicing sector capacity building activities will be continued under the updated HPMP Stage-II to train servicing technicians in the HVAC&R sector on good servicing practices to reduce HCFCs emissions and the safe-use of alternatives. Capacity building and awareness amongst customs and enforcement agencies and government stakeholders on HCFC trade monitoring and control will also be continued.
目前中国制冷空调行业的 HCFCs 消费量超过全国总消费量的 60%。随着中国第一阶段 HPMP 的实施，到 2015 年底，中国制冷空调行业已成功实现淘汰 10% HCFCs 消费量的目标。工商制冷空调、房间空调器、制冷维修和能力建设项目三个行业的第二阶段 HCFCs 淘汰行业计划于 2016 年 11 月召开的《蒙特利尔议定书》多边基金执委会第 77 次会议上获批。2020 年中国对第二阶段行业计划进行了更新做了 2021-2026 年的行业计划。工商制冷空调行业更新的第二阶段行业计划淘汰涉及的产品主要有单元式空调机、冷冻冷藏设备和压缩冷凝机组、冷水（热泵）机组、热泵热水机等。同时还在继续面向全行业公开征集生产线改造项目。维修行业能力建设也将在更新的 HPMP 第二阶段继续开展，将在制冷、空调和暖通行业培训维修技术人员的良好操作技能以减少 HCFCs 排放和制冷剂的安全使用。同时也在继续开展执法机构和政府利益相关方的能力建设和意识提升工作，以及对 HCFC 贸易监测及管控工作也在持续开展。

China had already implemented the conversion of manufacturing lines to lower-GWP alternatives mainly NH_3 and CO_2. At the same time, China has been undertaking several activities related to the development of safety standards and equipment/product standards using alternative refrigerant technologies. Chinese national standard GB 9237 was adapted from ISO-5149 and has been in effect since 1 July 2018. The GB 9237 sets the charge limit for using flammable refrigerants and lays the foundation for the promotion and application of environmentally friendly alternative refrigerants.
在 HPMP 实施过程中，中国制冷空调行业开展了生产线改造活动，主要采用了更低 GWP 值的替代品例如 NH3、CO2 等。除此之外，还开展了许多替代技术相关的安全和产品标准的修订和制订工作。等效采用 ISO 5149 的中国国家标准 GB 9237 已于 2017 年 12 月 31 日正式发布，并于 2018 年 7 月 1 日正式实施。GB/T 9237—2017 规定了可燃性制冷剂使用的门槛，该标准的实施为促进环保型替代制冷剂的市场化应用和推广奠定了基础。

Global developments in policies and technologies will affect the adoption of ozone and climate friendly technologies in China. At the same time, as one of the biggest manufacturing hubs for global R&AC equipment, the technology development trends of China's R&AC industry are significant in shaping the global alternative technology landscape.

全球的政策和技术趋势将会对中国制冷空调行业臭氧和气候友好技术的选择和应用产生影响。同时，作为全球制冷空调行业最大的制造中心，中国制冷空调行业的技术发展趋势对于塑造全球替代技术格局具有重要意义。

UN Environment Programme, UNDP, FECO and CRAA collaboration
UN Environment Programme、UNDP、FECO 与 CRAA 的合作

China Refrigeration and Air-Conditioning Industry Association (CRAA) is manufacturers' liaison with the government and has been devoting itself to provide its members and the whole industry with multifaceted and valuable services. CRAA are the co-organizers of the International Exhibition for Refrigeration, Air Conditioning, Heating and Ventilation, Frozen Food Processing, Packaging and Storage known as CRH, which is held annually in China. UN Environment Programme has collaborated with CRAA for the organization of the Ozone2Climate (O2C) technology roadshow and industry roundtable yearly as a part of CRH since 2012, and it is usually held alternately between Beijing and Shanghai. FECO in 2015 and United Nations Development Programme (UNDP) in 2017 also joined as a co-organizers of the O2C events. The objective of the partnership is to jointly promote and exhibit global advancements in ozone and climate friendly technologies. Along with the technology roadshow, an industry roundtable is also organized as a part of the event where policy makers and industry representatives discuss practical issues surrounding policy and technology selection that will promote ozone and climate benefits.
中国制冷空调工业协会（CRAA）是连接企业与政府的纽带，致力于为会员和全行业提供全方位、高价值的服务。CRAA 是国际制冷、空调、供暖、通风及食品冷冻加工展览会（即中国制冷展）的主办方之一。联合国环境规划署和中国制冷空调工业协会自 2012 年开始合作，在制冷展期间组织臭氧气候技术路演和工业圆桌会议，并作为制冷展的一部分，以后每年在北京和上海轮流举办。自 2015 年开始 FECO 参与联合主办，2017 年开始 UNDP 也参与联合主办，共同合作宣传和展示臭氧气候友好制冷剂技术的发展。路演的同时，作为活动的一部分， 也将组织召开一个工业圆桌会议，政策制定者及行业代表们将围绕臭氧和气候友好的制冷空调技术和政策选择等问题展开讨论。

Due to the global COVID-19 epidemic, the scale of the 2020 Chongqing CRH was reduced compared to previous years. The Chongqing CRH was joined by almost 500 enterprises/organizations with exhibition area of 5,0000 sq. meter. In total, more than 20,000 delegates visited the 2020 Chongqing Expo. An exhibition space of 320 sq. meter was specially allocated for the Ozone2Climate Roadshow, and more than 30 enterprises and organizations joined this Roadshow. Three roadshow forums were also organized that focused on good practices in the servicing sector and the refrigerant, air-conditioning and heat pump, cold chain & freezer and cold storage equipment sectors.

因受全球新冠肺炎疫情的影响，2020 年在重庆举行的中国制冷展较往届参展规模有所减小。但仍有近 500 个企业和组织参加展出，展出面积 50000 平方米。共有 2 万多名专业观众参观了展会。臭氧气候路演设置一个单独的 320 平米的展区，并以特装形式亮相，有 30 余家企业和组织参加了路演。主办方在路演展区设置了 3 个主题论坛吸引了众多观众参加。包括：维修良好操作及制冷剂论坛、空调及热泵论坛、冷链及冷冻冷藏设备论坛

Building on the success and momentum of the previous O2C events, UN Environment Programme, UNDP, FECO and CRAA will co-organize the 10th Ozone2Climate Technology

Roadshow and Industry Roundtable as a part of the CRH 2021 in Shanghai. The aim of the events is to continue the engagement of industry and policy makers to review the trends in alternative developments since the Kigali Amendment, and discuss approaches and strategies for overcoming challenges in adopting Ozone2Climate alternatives. We welcome prominent international, regional and national organizations to be partners of our two events as joint organizers and/or supporting organizers.
继前九届活动成功举办之后，主办方将继续在 2021 年上海制冷展期间组织第十届臭氧气候技术路演和工业圆桌会议。活动的目的是继续推动行业和决策者评估后基加利时代替代品的发展趋势，讨论克服臭氧气候替代技术挑战的措施和策略。主办方欢迎更多有影响力的国家、地区和国内组织参与和支持举办这两项活动。

2021 Ozone2Climate Technology Roadshow and Roundtable
臭氧气候技术路演和圆桌会议

The 2021 O2C Roadshow will be organized in an exhibition hall of nearly 800 sq. meters. The products/technology that will be exhibited in the Roadshow will include those relating to zero-ODP, lower-GWP alternatives, and products/technology with improved energy efficiency compared to HCFC-based technology. All manufacturers, research institutions, universities, non-governmental organizations (NGOs) that manufacture and/or own these technologies will be invited to display their products/technology either through sample products and/or display boards.
2021 年的路演将在中国制冷展展厅内进行，设置一个近 800 平方米的独立特装展台。在路演上展示的产品和技术将包括零 ODP、更低 GWP 替代制冷剂相关的且能效改善的产品和技术。生产这些产品或拥有相关技术的制造商、研究机构、院校和非政府组织都将被邀请来参加，通过样品或展板来展示他们的成果。

UN Environment Programme, UNDP, FECO and CRAA believe that the next generation of refrigerants should be more environmentally friendly, i.e. zero ODP, low/lower GWP and with improved energy efficiency. Therefore, alternatives to HCFCs and HFCs with high GWPs will not be included in this Roadshow. Also, the roadshow would like to showcase innovative technologies such as solar cooling/refrigeration which is not only ozone friendly but also has climate and energy-use benefits. The Industry Roundtable will complement the Roadshow for the industry and policy makers to explore its development trends, and its contribution to the Sustainable Development Goals, challenges and opportunities, etc. The objective of the Roadshow is to assist the industry to take an informed decision in selecting ozone and climate-friendly alternatives for the phase-out of HCFCs and phase-down of HFCs under the Kigali Amendment. The Roadshow and roundtable will not endorse any specific technology.
主办方一致认为未来的替代制冷剂将是更加环境友好型：零 ODP、更低 GWP、更高能效。因此，高 GWP 的 HCFCs 替代物质将不会出现在本次路演上。本次路演还希望展出创新技术，例如太阳能制冷等，这些技术不仅是臭氧友好的，而且也是对气候和节能有益。工业圆桌会议将作为路演的补充，以使行业和政策制定者探索其发展趋势，以及对可持续发展目标、挑战和机遇的贡献。路演的目的是希望帮助行业在淘汰 HCFCs 选取臭氧和气候友好替代技术时能够做出明智的决定，同时兼顾考虑基加利修正案下的 HFC 的削减。但是路演和圆桌会议将不涉及对任何特定替代技术的认可与支持。

UN Environment Programme, UNDP, FECO and CRAA in cooperation with the Organizing Committee of China Refrigeration Expo (CRH), will provide free space for the invited

exhibitors of 2021 CRH to exhibit their products and/or display boards. The invited exhibitors, however, will be responsible to cover the following costs: travel costs, product/display transportation, designing/printing of display board and brochures/materials.
UN Environment Programme、UNDP、FECO 和 CRAA 与中国制冷展组委会开展合作，将向每个被邀请参加路演的本届制冷展的展商免费提供在路演展台上展示样品或宣传展板的机会。但是参展商需要自己承担包括展品的运输、展品或展板, 宣传册设计、印刷以及运输等工作以及相关费用。

UN Environment Programme will widely outreach this event through its OzonAction Newsletter/website and encouraging the National Ozone Units from Asia Pacific network and industry experts to join this event as well. The CRAA will also promote the event through its website.
为了推广这个活动，UN Environment Programme 会通过臭氧行动时事通讯/网站传递路演和圆桌会议的相关信息，并将邀请国家臭氧机构和其相关行业参加此次展会。CRAA 也将在官网对此活动进行宣传。

Main Objectives of the Ozone2Climate Technology Roadshow and Industry Roundtable
臭氧气候技术路演和工业圆桌会议的主要目标

- To explore roadmap for the development of the cooling industry aligning with the sustainable development goals.
  探索符合可持续发展目标的制冷行业路线图。
- To provide outreach about the latest ozone and climate-friendly technologies to R&AC industry and professionals participating in CRH 2021, and to showcase the leading role of industry pioneers that have developed or adopted ozone and climate-friendly technologies.
  通过技术路演和展会，向参加 2021 制冷展的制冷空调行业和专业观众推广可行的臭氧气候友好技术，展示开发和采用气候臭氧友好的制冷空调技术的行业领军企业。

- To engage industry decision makers in a discussion on the availability, affordability and need for zero-ODP, low/lower-GWP and more energy efficient alternatives in R&AC sector while considering complimentary climate and energy-use benefits.
  引导制冷空调行业决策者在考虑最终产品整个生命周期的气候影响时，讨论零 ODP、零或更低 GWP 和更节能的替代品的可能性、经济性和需求。

Theme for Ozone2Climate Industry Roundtable discussions
臭氧气候工业圆桌会议讨论的主题

Taking the opportunity of the presence of leaders of the cooling industry and other stakeholders, the Industry Roundtable will focus on promoting investment, research and development in zero-ODP, low GWP and higher energy efficient technologies for the R&AC sector. Any innovative discussion themes that can inspire the Ozone2Climate event are welcome. The potential theme/multi theme options of the roundtable are as follows:
行业的主要力量以及利益相关方将会出席圆桌会议，借此机会，会议将重点讨论制冷空调行业在推进零 ODP、更低 GWP 和更高能效技术方面的投资、研究和发展的相关问题。任何能够启发臭氧气候保护的创新理念和技术都欢迎。圆桌会议可以关注一个单独的主题，也可以是涉及到多个主题的综合解决办法。议题如下：

- The global cooling industry development trends and its implication to the Sustainable Development Goals (SDG) post Kigali
  后基加利时期全球制冷空调行业发展趋势及其对可持续发展目标的意义

- Challenges and strategies on implementing China's HCFC Phase-out Management Plan, especially the difficulties and possible solutions for small and medium enterprises (SMEs);
  中国 HCFCs 淘汰管理计划实施面临的挑战及应对策略，特别是中小企业 HCFCs 淘汰面临的困难及可能解决方案；

- Updates on the development of safety policy, regulations and standards related with alternative refrigerants;
  国内外替代制冷剂安全相关的政策、法规和标准的进展；

- Updates on the R&D and market mechanisms to promote low GWP alternative technology, with as special focus on energy efficiency improvements;
  替代技术的研发、应用和市场推广进展，特别是与替代产品能效提升相关的技术；

- Bottlenecks constrain the market penetration of low GWP alternative technology cooling products, and innovative business models to provide low GWP alternative, higher energy efficiency technologies
  低 GWP 制冷技术产品市场普及的瓶颈约束，以及提供低 GWP 替代技术和高能效技术的创新商业模式

- Servicing sector challenges, capacity needs and way-forward in terms of global and national perspectives especially under COVID-19;
  全球和国家视角下，尤其是在新冠疫情的影响下，维修行业的挑战、能力需求和前进之路，；

- Trends and opportunities for not in-kind technologies for various HVAC&R applications.
  应对各种制冷、空调和暖通空调应用的非典型性技术的趋势及机遇。

Target Audience
目标嘉宾

UN Environment Programme, UNDP, FECO and CRAA will send invitation letters to the potential exhibitors to participate in the Roadshow. Finally, UN Environment Programme, UNDP, FECO and CRAA will jointly select at least 50 exhibitors to participate in the Roadshow based on the technologies that they will be showcasing. Only the invited exhibitors will be allowed to exhibit their products or displaying board in the Roadshow.
UN Environment Programme、UNDP、FECO 和 CRAA 将会给潜在的路演参展商发送邀请函，并将基于他们所要展示的技术联合挑选至少 50 家参展商参加路演，只有被邀请的展商可以在路演展台上展示样品或展板。

UN Environment Programme, UNDP, FECO and CRAA will further separately invite the other international organizations, NGOs, as well as government departments from bilateral

agencies like GIZ, Japan, and the USA who are interested in setting up their exhibition to display their efforts, projects, and policies in promoting zero-ODP, low/lower GWP and energy efficient alternatives. UN Environment Programme, UNDP, FECO and CRAA will also invite the industry association from other countries such as India, Brazil, US, the EU and Japan, Republic of Korea, Australia and Canada for their participation in the Roadshow as well as the roundtable.

UN Environment Programme、UNDP、FECO 和 CRAA 将分别邀请其他的国际组织，非政府组织以及来自双边机构（如德国国际合作机构、日本、美国）等有兴趣的政府部门，来展示他们在推广零 ODP 值、更低 GWP 值和高能效替代品方面的成就、工程项目以及政策。主办方还将邀请来自印度、巴西、美国、欧盟、日本、韩国、澳大利亚、加拿大的行业协会参加路演和圆桌会议。

The audience expected for the event is as follows:
活动期待的观众：

- Technical and business managers from chemical and equipment manufacturing industries producing and/or consuming HCFCs/alternatives;
  生产或使用 HCFCs/替代品的化工和设备制造行业的技术经理和业务经理；

- Decision makers from the R&AC industries and equipment manufacturers，purchasing department, users;
  来自制冷空调行业或设备制造商、采购部门、用户等的决策者；

- Technical experts engaged in technology research and development as well as assessment;
  从事技术研究、推广以及评估的技术专家；

- Representatives from key importing and exporting companies and industries in the region.
  领域内主要进出口企业和行业代表；

- The Technical and Vocational Education Training Institutions, authorities as well as refrigeration and air conditioning servicing industry
  职业教育培训机构和制冷空调维修行业代表。

The Roundtable will be organized in a meeting hall near the venue of the Roadshow (to be specified later). The side-sessions on different topics would also be organized near the meeting area of the Roadshow booth.
圆桌会议会在路演临近的会议厅举办。同期，还将在路演展区的会议区举办不同主题的分论坛。

Expected Outcomes of Roadshow and Roundtable
路演和圆桌会议的预期成果

- Update the policy development trends for the cooling industry linked with the SDG;
  更新与可持续发展目标有关的制冷空调行业政策发展趋势；
- Update the effort made for the implementation of the Montreal Protocol, especially on

the HFC phasedown, and disseminate information on the implications of the selection of the alternatives;
《蒙特利尔议定书》实施取得的最新成果，特别是 HFCs 削减和替代品的选择；

- Understand the direction of the trends and developments of zero ODP, low/lower GWP, energy efficient alternatives to HCFCs in the context of the upcoming HFC phase-down;
  在即将开始削减 HFC 的大背景下，了解零 ODP 值、更低 GWP 值和更高效能 HCFCs 替代品的发展方向；
- Discuss market barriers for the adoption of HCFC and HFC alternative technologies and discuss potential business;
  讨论采用 HCFC 和 HFC 替代技术的市场障碍以及潜在的商机；
- Identify the present, near-term and long-term need for policies, technologies and services implementing the Montreal Protocol to enable accelerated adoption of lower GWP, non- ODS refrigerant based technologies and preventing a large-scale phase-in of higher GWP HFCs;
  确认执行《蒙特利尔议定书》目前的、短期和长期的政策、技术和服务方面的需求，加速采用更低 GWP 值、零 ODS 制冷剂技术，避免出现大规模使用高 GWP 值 HFCs 的现象；
- Better understanding of the capacity building needs of the servicing sector and the options/approaches that countries could consider;
  对维修行业能力建设的需求更好的认识，以及可供国家考虑采用的加强维修行业能力建设的措施；
- Identify and discuss the emerging best practices, policy direction, and market mechanisms for accelerating the transition commercially feasible HCFCs alternatives that are environment friendly.
  讨论现有最好的实践案例，政策导向，市场化进展以及加速转换使用环保的、经济的、市场化易行的环境友好型 HCFCs 替代制冷剂的合理性。

Dates and Venue
路演及圆桌会议的时间和地点

Date: 7-9 April 2021
时间：2021 年 4 月 7-9 日

Venue: Shanghai New International Expo Center, China
地点：中国 • 上海新国际博览中心