

利用世界银行贷款中国塑料垃圾减量项目重庆
市统筹城乡塑料垃圾综合治理子项目
洛碛低值回收物循环利用基地项目塑料油化裂
解系统设备采购

招标文件（草稿）

重庆市环卫集团有限公司

2025年9月



一、资格要求

因素 Factor	财务状况 3 Financial Situation					
子因素 Sub-Factor	要求 Requirements	标准 Criteria				所需文件 Documentation Required
		投标人 Bidder				
		单一实体 Single Entity	联合体 (已成立或拟成立) Joint Venture (existing or intended)			
			所有成员联合 All members combined	每位成员 Each member	至少一名成员 At least one member	

1.1 历史财务状况 1.1Financial Capabilities	提交过去三年（2022 年-2024 年）经审计的财务报表，或者，如果投标人所在国不要求经审计的财务报表，提供业主可接受的其它财务报表，以反映投标人现在财务状况的稳定性及其长期的盈利性。最低要求，投标人过去 3 年（2022 年-2024 年） 每年的净资产（按总资产与总负债之差计算）均应为正值。 Submission of audited balance sheets or if not required by the law of the Bidder's Country, other financial statements acceptable to the Employer, for the last 3 [2022-2024] years to demonstrate the current soundness of the Bidders financial position and its prospective long term profitability. As a minimum, the Bidder's net assets (calculated as the difference between total assets and total liabilities) must be positive for each of the last three years [2022-2024].	必须符合要求 Must meet requirements	不适用 N/A	必须符合要求 Must meet requirements	不适用 N/A	提供财务报告及财务报表
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1.2 年均施工营业额 1.2 Average Annual Turnover	过去三年（2022 年-2024 年）里在建工程或已完工程经核实的已收到的付款额计算的年均营业额为不少于人民币29000 万元。 Minimum average annual turnover of CNY 290 million, calculated as total certified payments received for contracts in progress or completed, within the last 3 (2022-2024) years	必须满足要求 Must meet requirement	必须满足要求 Must meet requirement	必须满足所要求金额的百分之二十五（25%） Must meet twenty-five percent (25%) of the requirement	必须满足所要求金额的百分之四十五（45%） Must meet forty-five percent (45%) of the requirement	提供财务报告及财务报表
1.3 财务资源 1.3 Financial Resources	投标人上一年度（2024 年）财务资源（如速动资产、未支配的实际资产、授信额度和其它融资来源，但不包括合同预付款）必须能够满足： The Bidder must demonstrate access to, or availability of, financial resources of last year (2024) such as liquid assets, unencumbered real assets, lines of credit, and other financial means, other than any contractual advance payments to meet:	必须满足要求 Must meet requirement	必须满足要求 Must meet requirement	必须满足所要求金额的百分之四十 Must meet forty percent (40%) of the requirement （40%）	联合体牵头方必须满足所要求金额的百分之百（100%） The lead partner of the joint venture must meet one hundred percent (100%) of the requirement	提供财务报告及财务报表

	(1) 以下现金流要求: <u>2900 万元</u>; 以及 (1) the following cash-flow requirement: <u>CNY 29 million</u>; and (2) 实施本合同和其它在履行项目所需的总现金流要求。 (2) the overall cash flow requirements for this contract and its current commitments.					
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因素 Factor	2 经验 2 Experience				
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2.1 一般经验 2.1 General experience	自 2020 年 1 月 1 日起, 投标人过去在裂解设备供货和安装行业中作为承包商、分包商的合同经验不少于 5 年。 Experience in pyrolysis equipment supply and installation sector under contracts in the role of contractor, subcontractor, or management contractor for at least the last 5 years starting 1st January 2020.	必须满足要求 Must meet requirement	不适用 N/A	必须满足要求 Must meet requirement	不适用 N/A

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2.2 (a) 特殊经验 2.2(a) Specific Experience	(a) 投标人应证明其在投标截止日期前的十年内(即 2015 年 1 月 1 日起至投标截止日止,以项目验收时间为准)已成功完成 2 个及以上类似合同的成功案例,且累计合同金额不低于人民币 8000 万元,其中至少有一个合同的合同金额不低于 3000 万元	必须满足要求 Must meet requirement	必须满足要求 ¹ Must meet requirement ⁴		
¹ 在联合体的情况下,不应累加联合体各成员方所完成合同的金额来确定是否满足单个合同的最低金额要求。而应该是,每个成员方履行的每个合同均应满足对单一实体要求的单个合同的最低金额要求。在确定联合体是否能满足合同总数量要求时,只有各成员方完成的单个合同金额等于或大于最低金额要求的合同的数量才能被累加。 ¹ In the case of JV, the value of contracts completed by its members shall not be aggregated to determine whether the requirement of the minimum value of a single contract has been met. Instead, each contract performed by each member shall satisfy the minimum value of a single contract as required for single entity. In determining whether the JV meets the requirement of total number of contracts, only the number of contracts completed by all members each of value equal or more than the minimum value required shall be aggregated.					

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	(合同金额指：①仅指供货与安装部分合计；②同一工程项下的与本项目不相似的合同项的合同金额不能累计),这些合同应已成功完成，且合同性质和复杂性与本项目项下的货物和相关服务相似，相似性基于以下： (a) Participation as contractor, joint venture member , management contractor, or subcontractor, in at least two (2) contracts within the last ten (10) years (i.e., from 1st January 2015 to the bid submission deadline,					

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	based on the project acceptance date), with a cumulative contract amount no less than CNY 80 million, of which at least one contract has a value of no less than CNY 30 million, that have been successfully and substantially completed and that are similar to the proposed Plant and Installation Services. ("Contract amount" refers exclusively to the sum of supply and installation; ② contract				

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	amounts for parts of the same project that are not similar in nature to this project shall not be aggregated.) The similarity of the contracts shall be based on the following: ①废塑料油化裂解项目成功案例。 ① Successful cases of waste plastic-to-oil pyrolysis project ②合同采购范围内应包括废塑料裂解的设备供货与安装，且整线处理能力不低于 5000 吨/年					

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	(含 5000 吨/年)。 ② The scope of supply under the contract shall include the provision and installation of equipment for waste plastic pyrolysis, and the processing capacity of the complete production line shall not be less than 5,000 tons per year (inclusive).					
2.2(b) 特殊经验	b) 投标人至少完成过 1 个油品深加工系统的合同, 且整线处理	必须满足要求	必须满足要求	不适用	必须满足要求	投标人必须提供相关证明

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2.2(b) Special Experience	能力不低于 80 吨/天。 b) The Bidder has completed at least 1 oil deep processing system contract, and the whole line processing capacity is not less than 80 tons/day.	Must meet requirement	Must meet requirement	N/A	Must meet requirement	文件，包括但不限于： The Bidder must provide relevant supporting documents, including but not limited to: ①合同复印件；附在投标文件中的合同复印件必须包括能体现以下内容的合同页：合同首页（体现项目或货物名称）、采购内容、合同签订日期、合同签字盖章页，并注明最终用户联系人及联系方式。

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						① Copy of contract: The copy of the contract attached to the Bids must include a contract page that can reflect the following contents: the first page of the contract (reflecting the name of the project or goods), procurement content, contract signing date, contract signature and seal page. The contact person

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						and contact information of the end user must also be specified. ②最终用户出具的验收证明材料。 ② Acceptance certification materials issued by the end user.
2.3 资质要求 2.3Qualification requirements	具备机电安装工程施工总承包贰级及以上资质、或环保工程专业承包贰级及以上资质、或市政公用工程施工总承包企业贰级	必须满足要求 Must meet requirement	必须满足要求 Must meet requirement	不适用 N/A	必须满足要求 Must meet requirement	国内投标人提供其在中华人民共和国相关部门有效的资质证书及营业执照复印件（表明其法定代表人、注册资本和

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	及以上资质。 Possess a Grade II or above General Contracting Qualification for Mechanical and Electrical Installation Engineering, or a Grade II or above Professional Contracting Qualification for Environmental Protection Engineering, or a Grade II or above General Contracting Qualification for Municipal Public Works.					经营范围等); 国外的投标人应在其国家管辖范围内具有相类似的资格。 Domestic bidders shall provide a copy of their valid qualification certification and business license issued by the relevant authorities in the People's Republic of China (indicating the legal representative, registered capital, scope of

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					business, etc.); foreign bidders shall possess equivalent qualifications within the jurisdiction of their respective countries.

二、承包商代表和关键人员

序号	职位/专业	证书要求	人数	相关学历	相关工作经验最低年限
S/N	Position/specialization	Certificate requirements	Number of persons	Relevant academic qualifications	Minimum years of relevant work experience

1	承包商代表（项目管理 人员） Contractor's Representative (Project Manager)	具备环境（环保） 类或化工类或机 械类等高级及以 上工程师 Certificate of senior engineer (or higher level) in environment (environmental protection), chemical engineering, or machinery	1 人 1 person	本科及以 上 Bachelor's degree and higher degrees	(1) ≥10 年的工作 经验； (1) ≥10 years' work experience; (2) 近 10 年内 (即 2015 年 1 月 1 日起至今) 参与过至少 2 个类 似项目案例（案例 合同内容应包含 类似的废塑料裂 解设备）； (2) Participated in at least 2 similar project cases within the last 10 years (i.e., from 1st January, 2015, to the present) (the contract content of the cases shall include similar waste plastic pyrolysis equipment);
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2	工艺工程师 Process engineer	具备化工或环境（环保）类高级及以上工程师 Possess a senior or above engineer certificate in the chemical engineering or environment (environmental protection) field.	2 人 2 persons	本科及以上学历 Bachelor's degree and higher degrees	≥10 年的工作经验； ≥10 years of work experience;
3	设备工程师 Equipment engineer	具有机械电气类或化工类高级及以上工程师 Possess a senior or above engineer certificate in the mechanical, electrical, or chemical engineering field.	1 人 1 person	本科及以上学历 Bachelor's degree and higher degrees	≥10 年的工作经验； ≥10 years of work experience;
4	电气工程师 Electrical Engineer	具有机械电气类高级及以上工程师 Possess a senior or above engineer certificate in the mechanical or electrical field.	1 人 1 person	本科及以上学历 Bachelor's degree and higher degrees	≥10 年的工作经验； ≥10 years of work experience;

注：针对上述关键人员投标人需要提供相关人员身份证复印件、职称证书复印件、学历（学位）复印件、可以体现工作经验年限的社保证明材料（国外专家除外）和项目案例的合同关键页复印件。

Note: For the key personnel mentioned above, Bidders are required to provide copies of the relevant personnel's ID card, professional qualification certificates, academic degree/diploma certificates, social security proof materials demonstrating years of work experience (except for foreign experts), and key contract pages of project case examples.

三、分包商/制造商要求

在初步选定文件中确定的主要供应或服务项目的分包商/制造商，必须满足或持续满足该文件中对各项目规定的最低标准。

Subcontractors/manufacturers for major items of supply or services identified in the Initial Selection document must meet or continue to meet the minimum criteria specified therein for each item.

下列附加主要供应或服务项目的分包商，必须满足本条所列针对该项目的最低要求：

Subcontractors for the following additional major items of supply or services must meet the following minimum criteria, herein listed for that item:

项目 编号 Item No.	名称 Description of Item	需满足的最低标准 Minimum Criteria to be met
1	进料装置（进料机、给料机） Feeding unit (feeder)	2020 年 1 月 1 日—至今，至少具有__件/ 台销售所涉及的塑料、橡胶（轮胎）、油 泥等裂解生产线的进料装置的销售业 绩。 Have a sales record of feeding units for pyrolysis production lines with a production rate of at least 20 pieces/unit involving materials such as plastics, rubber (tires), and oil sludge from 1st January 2020, to present.

2	出料装置（出料机） Discharging unit (discharging machine)	2020 年 1 月 1 日一至今，至少具有__件/台销售所涉及的塑料、橡胶（轮胎）、油泥等裂解生产线出料装置的销售业绩。 Have a sales record of discharging units for pyrolysis production lines with a production rate of at least 20 pieces/unit involving materials such as plastics, rubber (tires), and oil sludge from 1st January 2020, to present.
3	裂解装置（裂解炉、裂解主机、裂解器） Pyrolysis unit (pyrolysis furnace, main pyrolysis machine, pyrolysis machine)	2020 年 1 月 1 日一至今，至少具有__件/台销售所涉及的塑料、橡胶（轮胎）、油泥等裂解生产线裂解装置的销售业绩。 Have a sales record of pyrolysis units for pyrolysis production lines with a production rate of at least 20 pieces/unit involving materials such as plastics, rubber (tires), and oil sludge from 1st January 2020, to present.
4	供热装置（热风装置、热风炉） Heating unit (hot air unit, hot air furnace)	2020 年 1 月 1 日一至今，至少具有__件/台销售所涉及的塑料、橡胶（轮胎）、油泥等裂解供热装置的销售业绩。 Have a sales record of heating units for pyrolysis production lines with a production rate of at least 20 pieces/unit involving materials such as plastics, rubber (tires), and oil sludge from 1st January 2020, to present.

注：投标人需针对上述两项要求提供相关证明文件,包括但不限于:上述设备制造商的营业执照影印件、销售合同影印件、可体现“安装完成或验收完成”的由最终用户出具的证明函(需提供由客户方签字盖章的相关支持文件,例如:安装完成、验收完成或质保到期验收报告等能够体现设备“已安装或验收或已交付并获得客户认可”的证明材料)。附在投标文件中的销售合同影印件必须包括能体现以下内容的合同页:合同首页(体现项且名称)、采购内容、合同签订日期、合同金额、合同签字盖章页。

Note: Bidders must provide relevant supporting documents for the above two requirements, including but not limited to: photocopies of the business licenses of the aforementioned equipment manufacturers, photocopies of sales contracts, and a certification letter issued by the end user that reflects "installation completion or acceptance completion" (relevant supporting documents signed and stamped by the

customer must be provided, such as installation completion, acceptance completion, or warranty expiration acceptance reports, and other proof materials that demonstrate the equipment has been "installed, accepted, delivered, and recognized by the customer"). Photocopies of sales contracts attached to the bidding documents must include contract pages that reflect the following content: the first page of the contract (showing the project name), procurement content, contract signing date, contract amount, and the contract signing and stamping page.

四、实施期要求

总实施期约 420 天，其中：收到业主供货通知后 210 天完成系统所有设备材料供货，收到业主出具的安装预调试通知后 150 天内完成全部系统安装和预调试（包括无负荷单机调试、无负荷联机调试），完工验收（安装 预调试验收）合格接到业主出具的调试通知后，进入调试运行阶段，调试运行期为 60 天。

The Bidder shall complete the supply of all equipment and materials for the system within 210 days after receiving the Tenderee's supply notice. The successful Bidder shall complete the installation and pre-commissioning of all systems (including no-load single-machine commissioning and no-load online commissioning) within 150 days after receiving the installation and pre-commissioning notice issued by the Tenderee. After the completion acceptance of the installation and pre-commissioning is qualified, the Bidder will enter the commissioning operation stage after receiving the commissioning notice. The commissioning operation period is 60 days.

五、最低技术指标要求

产品质量指标 Product Quality

序号 S/	项目 Item	单位 Unit	废塑料 裂解油 Waste	产品深加工后油品指标 Oil after distillation (after product deep processing)	检测标 准或测 试方法	备注 Remar ks
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序号 S/ N	项目 Item	单位 Unit	废塑料 裂解油 Waste plastic pyrolysis oil	产品深加工后油品指标 Oil after distillation (after product deep processing)			检测标准或测试方法 Test standard or test method	备注 Remarks
				轻质馏 分油 Light distillate	中间馏分 油 Middle distillate	重油 Heavy distillate		
1	密度 (20℃) Density (20° C)	kg/m ³	≤900	≤850	800~900	实测 Measured	GB/T 1884、 GB/T188 5 GB/T 1884, GB/T18 85 [注 a] [Note a]	
2	闭口闪 点 Closed-c up flash point	℃	实测 Measured	<40	≥60	实测 Measured	GB/T 27847 [注 b] [Note b]	
3	氯含量 Chlorine content	mg/kg	≤5000	≤2000	≤2000	实测 Measured	GB/T 40111 [注 d] [Note d]	
4	酸值 (以 KOH 计) Acid	mgKOH /g	≤20	实测 Measured	实测 Measured	实测 Measured	GB/T 7304	

序号 S/	项目 Item	单位 Unit	废塑料 裂解油 Waste	产品深加工后油品指标 Oil after distillation (after product deep processing)			检测标 准或测 试方法	备注 Remarks
	value (as KOH)			ed		red		
5	水分（体 积分数 计） Moisture (by volume fraction)	v%	≤0.3%	≤0.3%	≤0.3%	≤ 0.3%	GB/T 260	
6	机械杂 质 Mechanic al impuritie s	w%	无杂质 No impuriti es	无杂质 No impuriti es	无杂质 No impurities	≤1	GB/T 511	
7	灰分 Ash content	w%	≤0.2	≤0.1	≤0.1	≤1.0	GB/T 508	
8	运动黏 度 (20℃、 40℃) Kinemati c viscosity (at 20° C,	mm ² /s	实测 Measur ed	<5	<10	/	GB/T265	

序号 S/	项目 Item	单位 Unit	废塑料 裂解油 Waste	产品深加工后油品指标 Oil after distillation (after product deep processing)			检测标 准或测 试方法	备注 Remarks
	40° C)							
注： Notes: a 也可采用 GB/T 13377、NB/SH/T 0874、SH/T 0604。 a. GB/T 13377, NB/SH/T 0874, and SH/T 0604 are available as optional standards. b 也可采用 GB/T 3536、GB/T 267、GB/T 261。 b GB/T 3536, GB/T 267 and GB/T 261 can also be used. d 也可采用 NB/SH/T 6056、NB/SH/T 0977。存在异议时，以 GB/T 40111 为仲裁方法。 d. NB/SH/T 6056 and NB/SH/T 0977 are available as optional standards. In the event of a disagreement, the method specified in GB/T 40111 shall be used as the arbitration method.								

系统性能指标要求 System Performance Indicators

序号 S/N	项目 Item	限值 Limit	单位 Unit	备注 Remarks
1	得油率 Oil yield	≥30	w%	
2	裂解生产线总处理能力 Total processing capacity of pyrolysis production line	≥140	t/d	
3	裂解单元每次开机连续安全稳定运行时间 Minimum continuous, safe, and stable operating time for each startup of the pyrolysis unit	≥30	d	

序号 S/N	项目 Item	限值 Limit	单位 Unit	备注 Remarks
注： Notes: (1) 得油率计算公式=考核期间的裂解油总重量/考核期进裂解炉物料总重量*100%; (1) Oil yield calculation formula = (total weight of pyrolysis oil during assessment period / total weight of materials to pyrolysis furnace during assessment period) × 100%; (2) 裂解生产线总处理能力：考核期间裂解生产线每天的总进料量； (2) Total processing capacity of the pyrolysis production line: the total daily feed of the pyrolysis production line during the assessment period; (3) 裂解单元至少每次开机连续安全稳定运行时间：试运行期 1 个月后，记录连续安全稳定运行时间（允许短暂停机调整，停机时间不超过 2 小时）； (3) Minimum continuous safe operation time for pyrolysis unit after each start: the continuous safe operation time recorded after a 1-month trial operation period (short-term shutdown adjustments allowed, with downtime not exceeding 2h);				

能耗指标要求 Energy Consumption Indicators

序号 S/N	项目 Item	限值 Limit	单位 Unit	备注 Remarks
1	整个裂解单元单吨原料电耗指标 Power consumption indicator per ton of raw materials for the entire pyrolysis unit	≤90	kWh/t	
2	整个产品深加工单元单吨裂解油电耗指标 Power consumption indicator per ton of pyrolysis oil for the entire product deep processing unit	≤45	kWh/t	
注： Notes: (1) 整个裂解单元单吨原料电耗指标=考核期间的总电耗/考核期间裂解单元的总进料； (1) Power consumption indicator per ton of raw materials for the entire pyrolysis unit = total power consumption during the assessment period / total feed to the pyrolysis unit during the assessment period; (2) 整个产品深加工单元单吨裂解油电耗指标=考核期间的总电耗/考核期间产品深加工单元的总进料； (2) Power consumption indicator per ton of pyrolysis oil for the entire product deep processing				

序号 S/N	项目 Item	限值 Limit	单位 Unit	备注 Remarks
unit = total power consumption during the assessment period / total feed to the product deep processing unit during the assessment period;				

排放指标要求 Emission Indicators

序号 S/N	项目 Item	限值 Limit	单位 Unit	备注 Remarks
1	氮氧化物 Nitrogen oxide	≤100	mgN/m ³	外排烟气中污染物排放指标应满足《石油化学工业污染物排放标准》（GB31571-2015（含 2024 修改单））中表 5 要求 The emission indicator of pollutants in flue gas discharged to the outside shall meet the requirements specified in Table 5 of GB31571-2015 Emission Standard of Pollutants for Petroleum Chemistry Industry (including the 2024 Amendment)
2	硫氧化物 Sulfur oxide	≤50	mg/Nm ³	
3	颗粒物 Particulate matter	≤20	mg/Nm ³	

