



IEA Bioenergy
Technology Collaboration Programme



Update on the Gasification Activities in China

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1. General information

- ❑ In total, **more than 80** larger-scale biomass gasification plants are running.

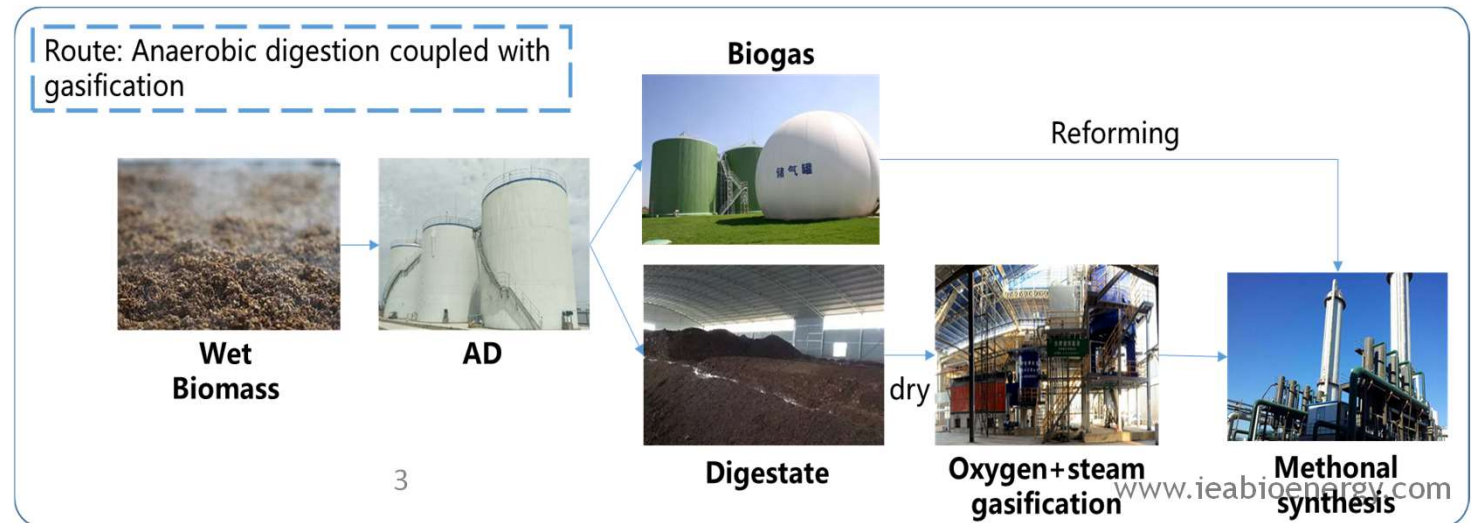


- ❑ **Total amount:** more than 5 million tons per year.
- ❑ **Type of feedstock:** agricultural and forestry waste, industrial organic waste (herb residue, distillers' grains, waste plastic, etc.), MSW, hazardous waste, coal mixture...
- ❑ **Scale:** 500 t/year to 100 000 t/year.
- ❑ **Type of gasifier:** mainly fixed bed and fluidized bed gasifier; in some rural area, movable gasifier is applied; almost no biomass entrained-flow bed gasifier.
- ❑ **Products:** fuel gas, electricity, heat, steam, bio-char, and bio-oil. **Biomass gasification towards chemicals are under construction, the green methanol plant will be started in 2025.**

2. Biomass to green methanol production

Company	Scale and technique route	Location	Status
China National Chemical Engineering Group Corporation Ltd.	1 million ton of methanol per year (0.2 million ton in the first-stage project); Biomass steam gasification	Yancheng, Jiangsu, China	Under construction
Debo bioenergy Ltd.	0.15 million ton of methanol per year. Biomass steam+oxygen gasification	Ruijin, Jiangxi, China	Under construction
Sany Group	0.37 million ton of methanol per year. Biomass gasification integrated with electrolysis of water	Changlin, Jilin, China	Signed a contract

- **32 green methanol** projects are planning or under construction in china, most of which applies biomass gasification.
- It is estimated, by 2025, China shares more than **60%** of global green methanol production, and by 2028, more **than 8.7 million** tons of green methanol will be produced by china.

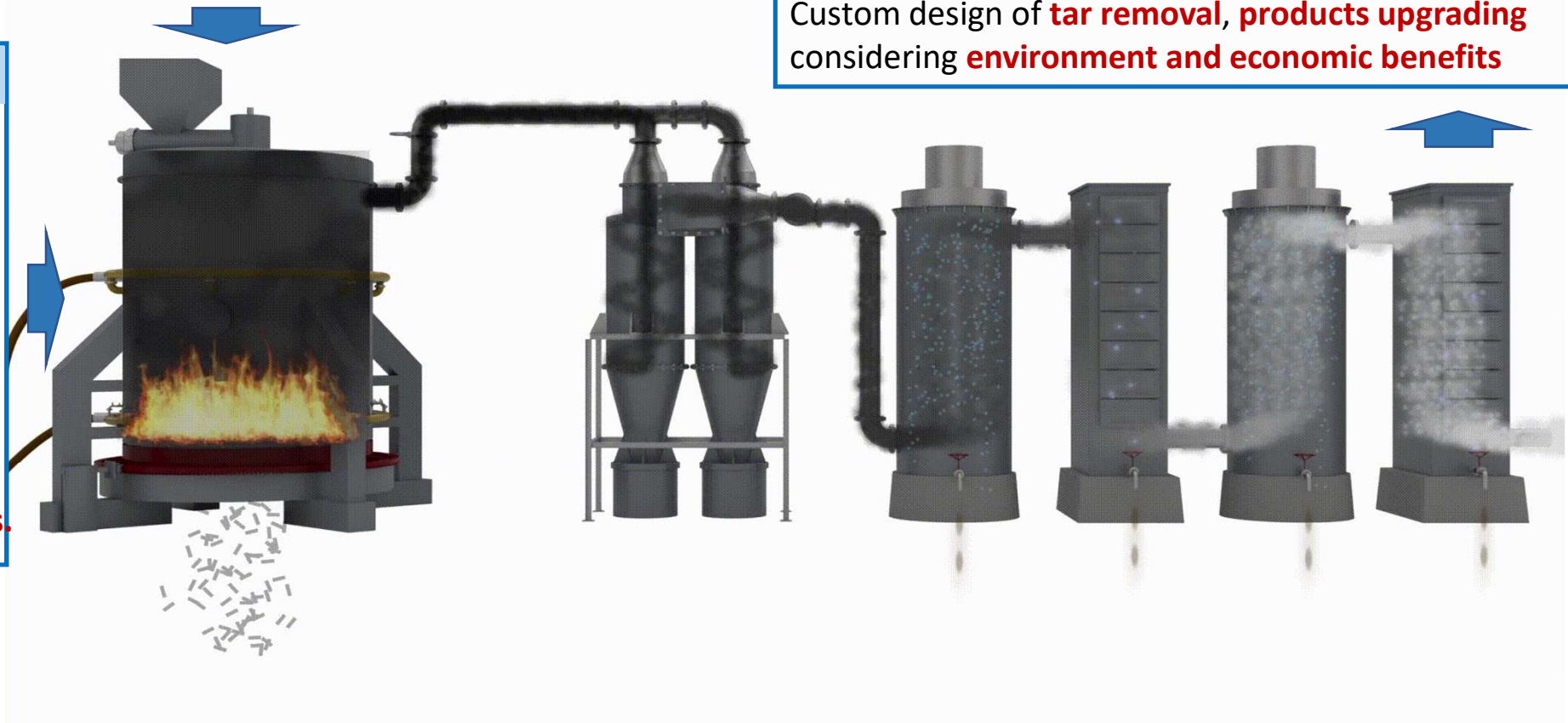


3. Perspectives in China

Source (feedstock)
From **biomass fuel** (briquettes) to **biomass waste** (MSW, LSG, etc).
Improve compatibility.

Products (benefits)
Producer gas used for **distributed energy supply**, concentrated **heat, power, steam production**, or **synthesis of chemicals**.
Custom design of **tar removal, products upgrading** considering **environment and economic benefits**

Process
Control of **temperature, pressure, retention time, gasification agent, and catalyst. Comprehensive design and smart control** towards **different products**.



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