Innovative Circular Technologies for Harmful Nitrogen Compounds/ To Solve Planetary Boundary Issues

Theme 1. Recycling nitrogen compounds in gas phase to ammonia resource
FS evaluation of NTA process in a chemical plant
And the pilot study and evaluation

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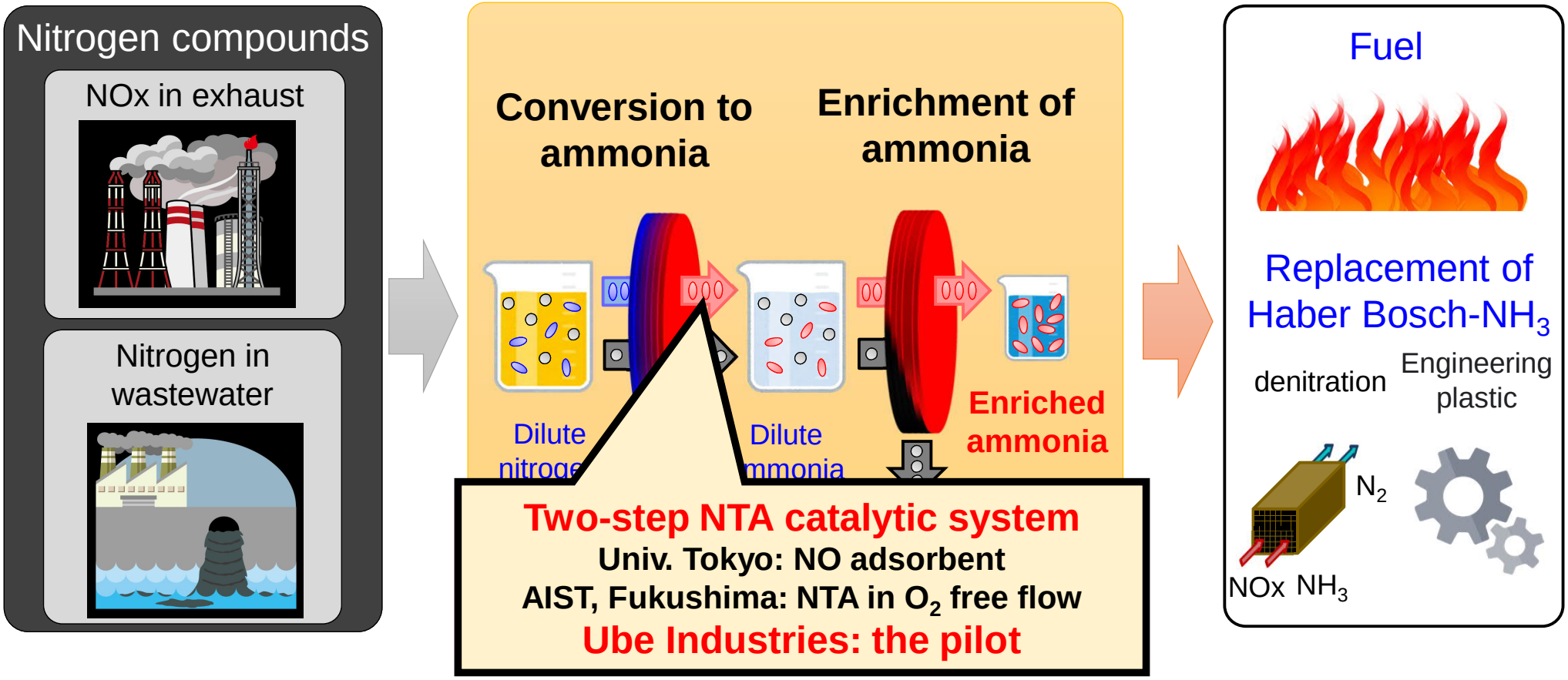
Implementing organizations : National Institute of Advanced Industrial Science and Technology (AIST),
The University of Tokyo, Waseda University,
Tokyo University of Agriculture and Technology, Kobe University,
Osaka University, Yamaguchi University, Kyowa,Hakko Bio Co., Ltd.,
ASTOM Corporation, Toyobo Co., Ltd., FUSO Corporation, Ube Industries, Ltd,

Position in the Project



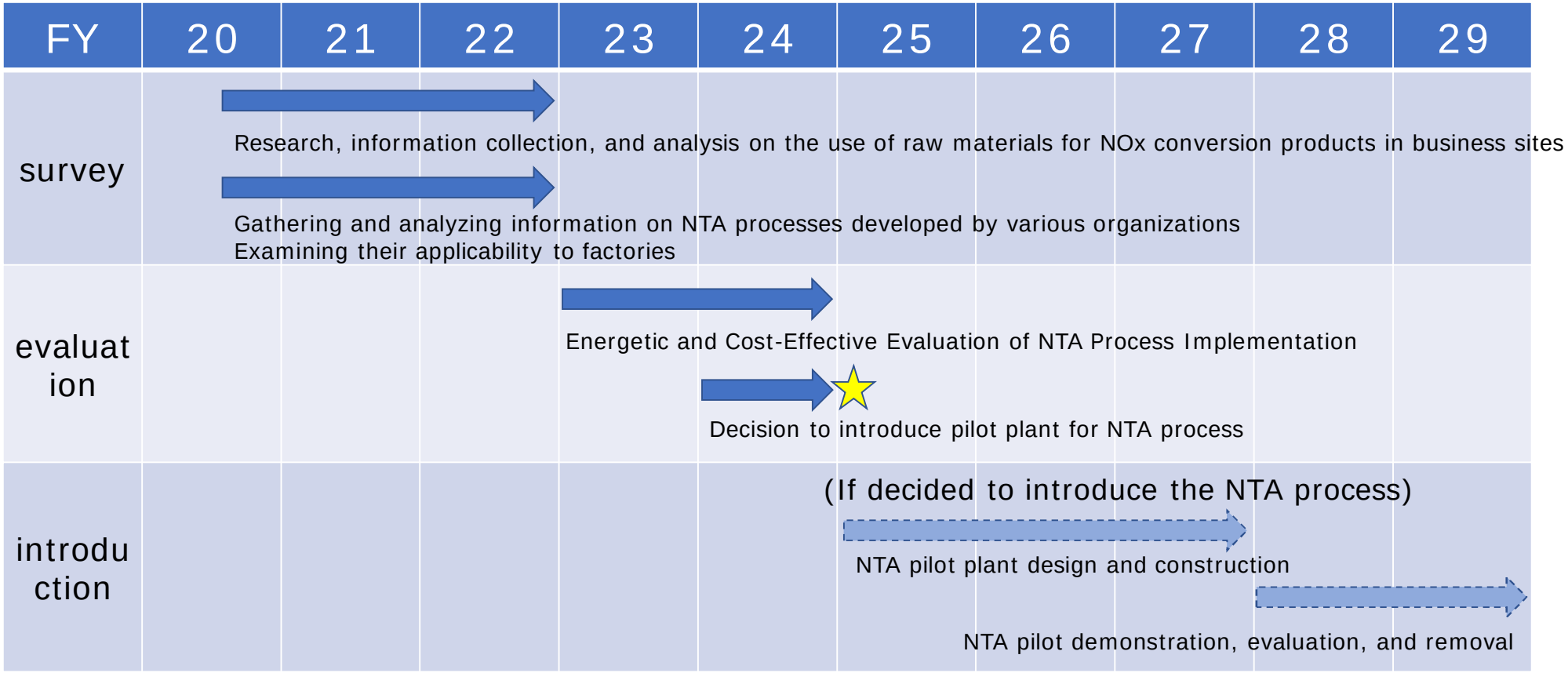
Target of Theme 1 for FY2029：NOx to Ammonia (NTA) reaction at 50% yield, and complete detoxification of exhaust gas

Position of Ube Industries: FS evaluation of the NTA catalyst system pilot

The target for FY2029: FS evaluation of NTA catalyst system pilot

Details & Items of R&D

FS evaluation of the NTA catalytic system, prototype of mini-pilot plant



【items】

- Gathering of information and provision of data, and sharing of information with various organizations in order to study the applicability of our plants
  ⇒ Preparations are underway for the introduction of the NTA mini-pilot plant in 2025~

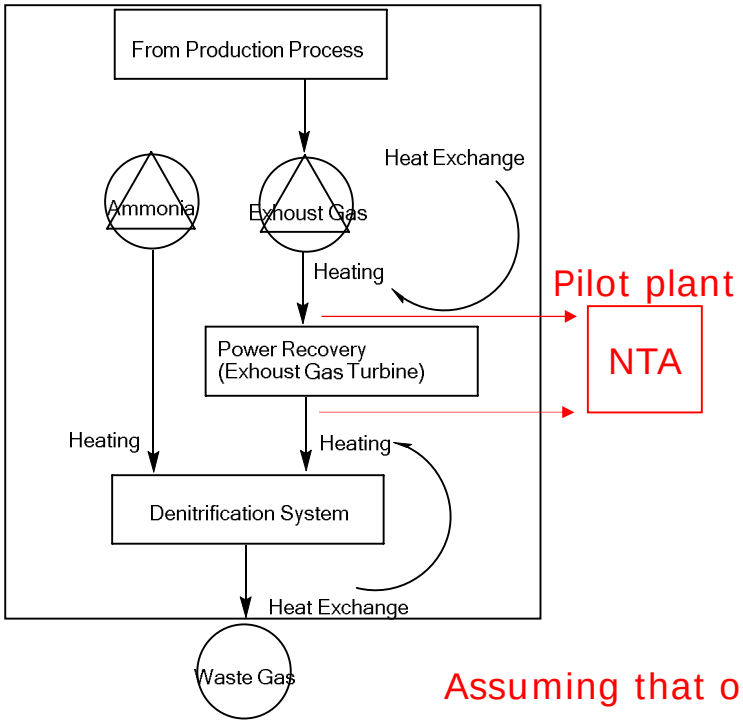
Details & Items of R&D

Ube area of Ube Industries

Emission to atmosphere (t)

	NOx emission (t)		
FY	2018	2019	2020
Ube Fujimagari Factory	314	395	295
Ube Chemical Factory (E&W)	3,695	3,546	3,331
Okinoyama Coal Center	–	–	–
Ube Cement Factory	1,931	1,448	1,246
Isa Cement Factory	6,432	7,149	7,080

Ube Industries, Ltd.
Integrated Report 2020, 2021



Ube chemical factory in west area		Factory L	Factory N
Emission gas in process	NOx	XXXX ppm	XXXX ppm
	N_2O	XXXX ppm	XXXX ppm
	O_2	XX %	XX %
	N_2	XX %	XX %
	Pressure	XX MPa	XX MPa
	Temp.	XX ℃	XX ℃
	Flow rate	XXXXX Nm^3/h	XXXXX Nm^3/h
Emission in Waste Gas	NOx	< 120 ppm	< 120 ppm

Private Information

Assuming that one of the exhaust gases is extracted by side flow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