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Effective collaboration between **PVCFC** and **ECC Bach Khoa**
in optimization and energy-saving project at Camau Fertilizer Plant

With support and consultation from DEPP3 Program
MOIT – Danish Energy Agency – Embassy of Denmark

PETROVIETNAM CAMAU FERTILIZER JOINT STOCK COMPANY

Presenter: Nguyễn Trường Giang

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I **About PVCFC and Camau Fertilizer Plant**

II **About collaboration between PVCFC and ECC Bach Khoa under DEPP3**

III **Foreseen effectiveness from this collaboration**

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I About PVCFC and Camau Fertilizer Plant

PETROVIETNAM CA MAU FERTILIZER JOINT STOCK COMPANY

Listing code	DCM
Company name	CONG TY CO PHAN PHAN BON DAU KHI CA MAU
English name	PETROVIETNAM CA MAU FERTILIZER JOINT STOCK COMPANY
Abbreviations	PVCFC
Charter capital	5,294,000,000,000 VND
Business registration certificate No.	2001012298
Headquarters	Lot D, Industrial Park Ward 1, Ngo Quyen Street, Ward 1, Ca Mau City, Ca Mau Province (84 - 290) 3.819.000 (84 - 290) 3.590.501
Ho Chi Minh City Office	No.173 – 179 Truong Van Bang, Thanh My Loi Ward, Thu Duc City, Ho Chi Minh City (84 - 28) 22.085.555
Website	www.pvcfc.com.vn

CHARTER CAPITAL

5,294,000,000,000

VND

CONTACT INFORMATION

Any inquiries about the annual report in general and information disclosure for investors in particular, please contact:

IR Team Mr. Do Thanh Hung

Email: ir@pvcfc.com.vn



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IN 2024
(CONSOLIDATED FINANCIAL INDICATORS)

TOTAL RESOURCES
(as at December 31, 2024)
15,729 billion VND

TOTAL ASSETS
15,729 billion VND

TOTAL REVENUE
14,037 billion VND

PROFIT BEFORE TAX
1,522 billion VND
UP 21% COMPARED TO 2023

PROFIT AFTER TAX
1,428 billion VND
UP 29% COMPARED TO 2023

OBLIGATIONS TO STATE BUDGET
370.97 billion VND
EQUAL TO 126% OF PLAN

TOTAL OPERATING CAPACITY OF 3 PLANTS
~ 1.5
million tons of fertilizer/year

CA MAU FERTILIZER'S DOMESTIC MARKET SHARE IN 2024
~10.62%



EXPORT VOLUME
319 thousand tons
ACCOUNTING FOR 24% OF TOTAL CONSUMPTION OUTPUT

TOTAL CONSUMPTION OUTPUT
1,325.3 million tons
PRODUCT GROWTH 5% COMPARED TO 2023

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Ammonia Unit:
Haldor Topsoe, Denmark

Urea Unit:
Saipem, Italia

Grannulation Unit:
Tec (Toyo), Japan

NPK Unit:
Espindesa, Spain

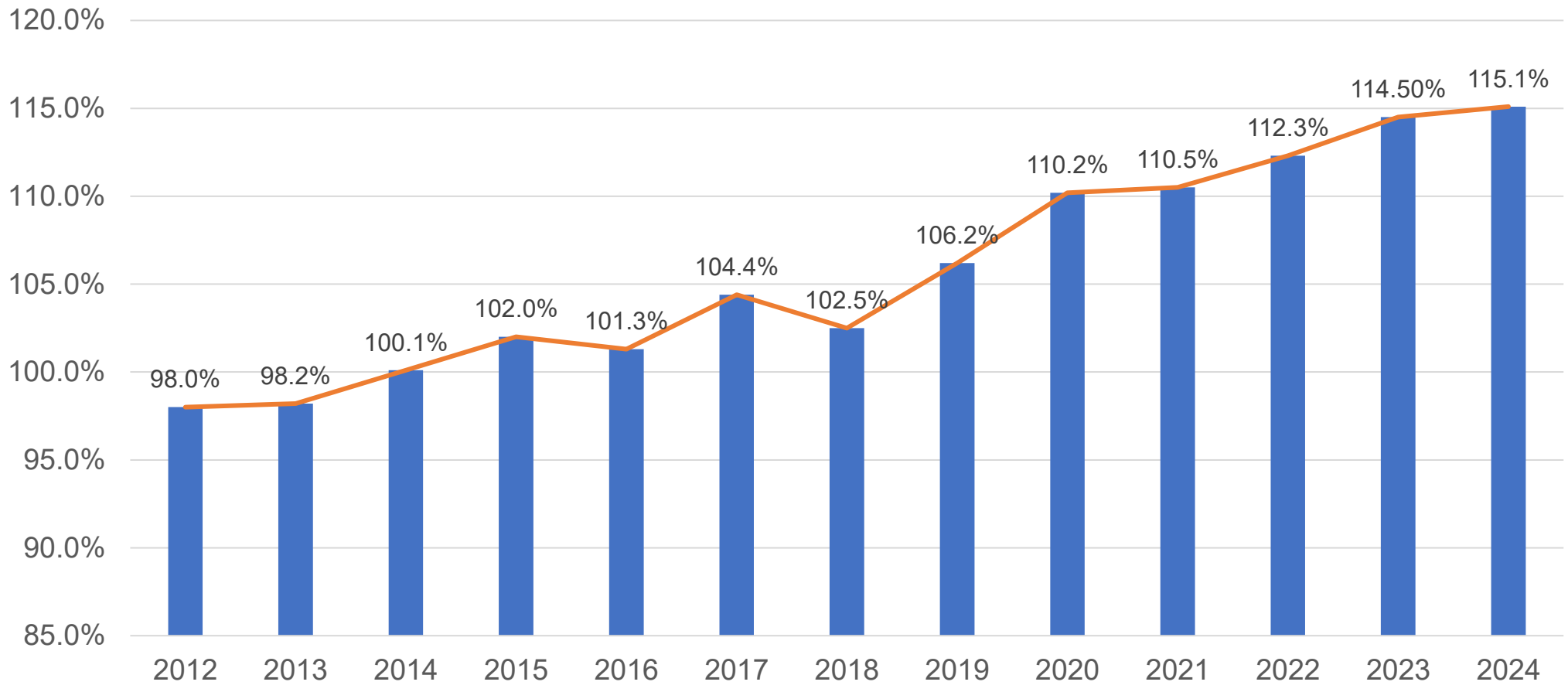
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CAPACITY OVER YEARS



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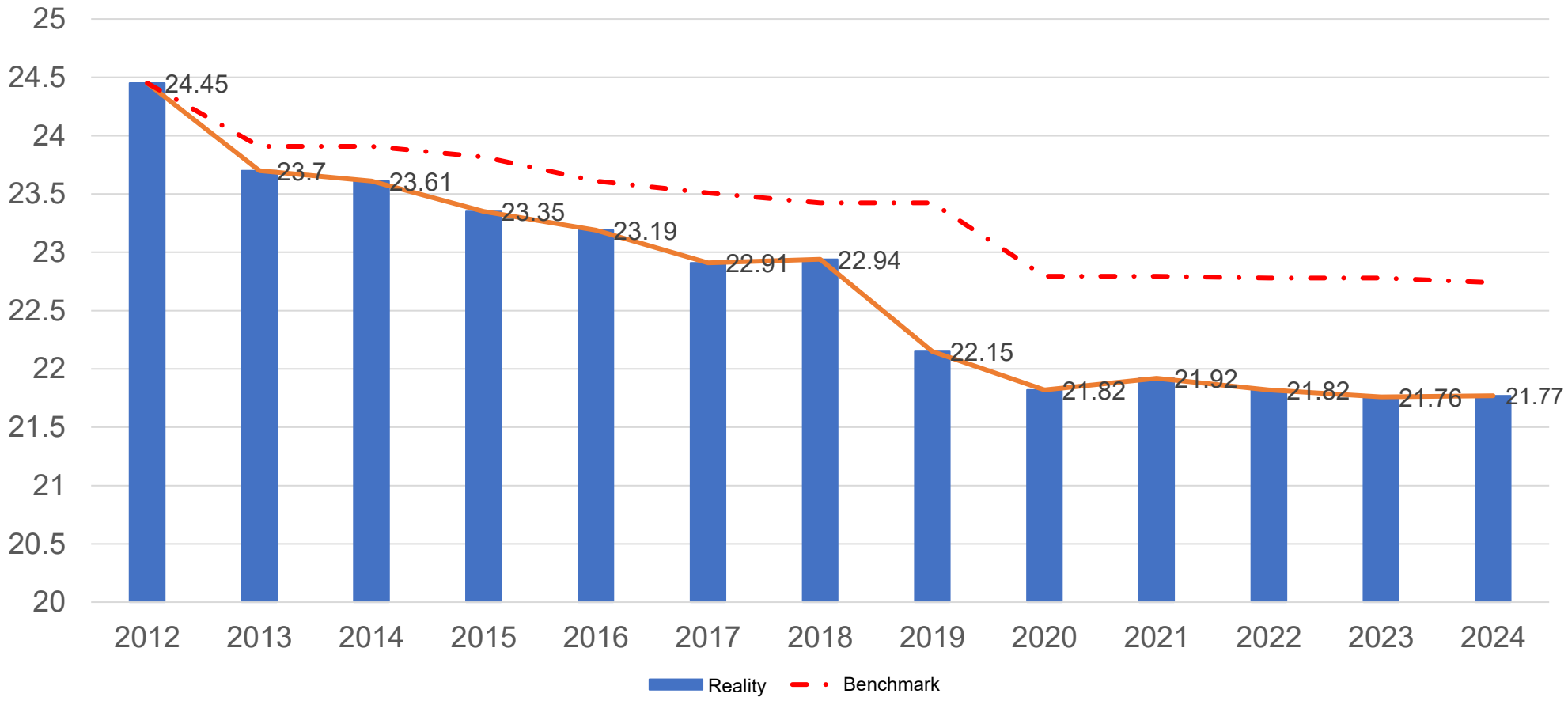
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PRODUCTION CONSUMPTION OF BAGGED UREA PRODUCT (GJ/TON)



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II About collaboration between PVCFC and ECC Bach Khoa under DEPP3

- **PVCFC signed the VA agreement with MOIT/IGIP (formerly EESD). EAC is ECCBK.**
  - ✓ Using high quality and sector experts to support with solution identification and enhancing the EA report quality
  - ✓ Having an objective viewpoint through specific comparisons with similar plants based on big data provided by experts
  - ✓ Turning potential solutions to pratical and effective implemented solutions

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III Foreseen effectiveness and lesson learnt

Key results and in-depth assessments from DEPP3 experts:

1. Providing an objective perspective based on energy consumption data and benchmarking against similar plants worldwide.

2. Providing specific, accurate and objective assessments of the **cooling water – heat exchange system** – one of the plant's most critical processes – and energy management practices of several auxiliary systems.

3. Supporting the conversion of opportunities into pratical solutions by assisting the plant to conduct PreFS and FS projects.

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III Foreseen effectiveness and lesson learnt

Focused areas of assessment:

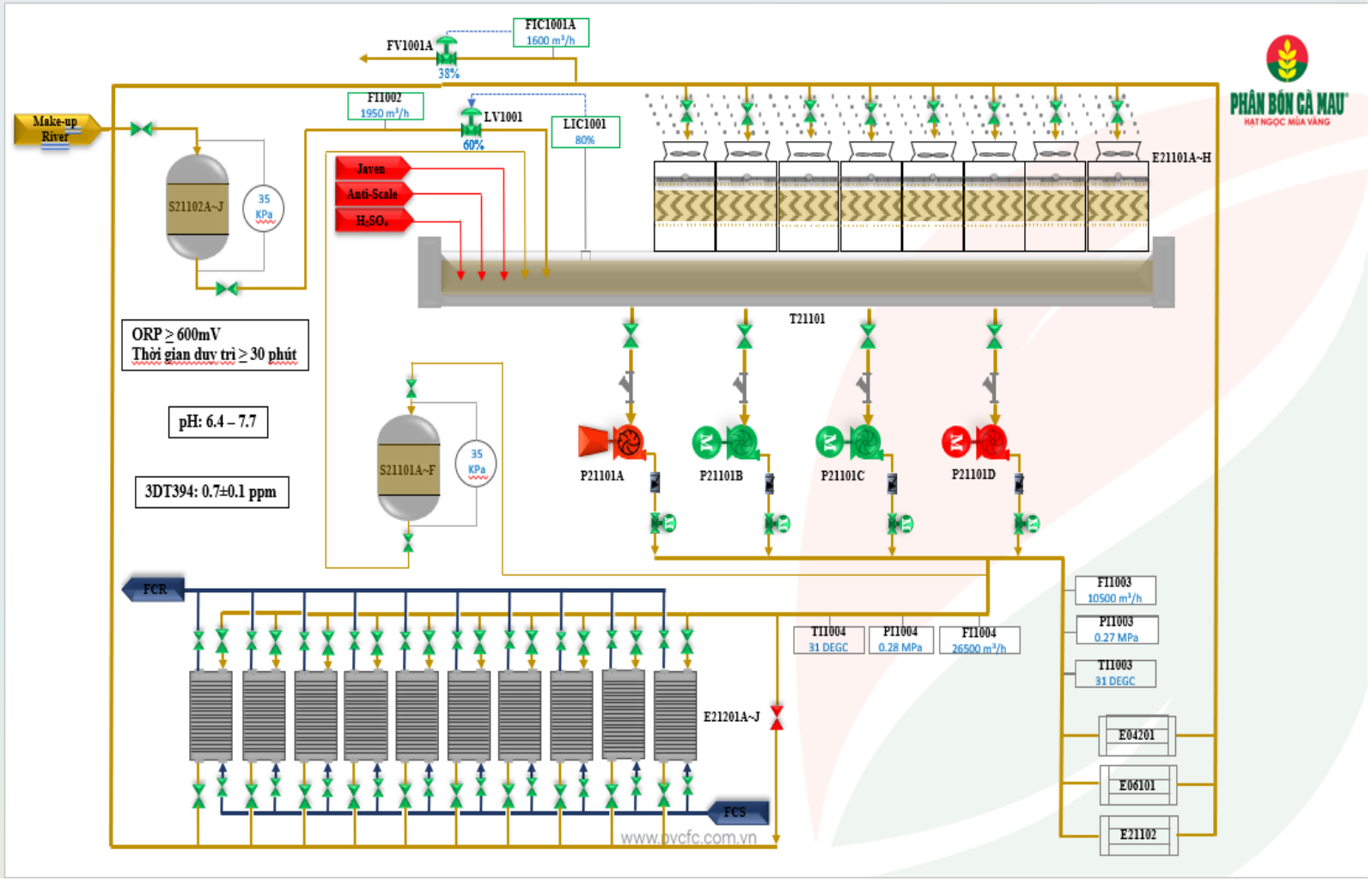
- Evaluate major electricity consumers and potential application of VFDs to reduce energy consumption
- Apply ORC technology to generate electricity from waste heat
- **Recover excess energy, and enhance energy-efficient use**
- **Optimize the cooling water system - upgrade technology and processes to increase plant and process capacity**
- Apply alternative energy sources and environmentally friendly raw materials
- Apply advanced technologies to improve efficiency of individual process
- Evaluate and control energy-consuming processes and auxiliary utility systems
- Evaluate energy management system and GHG inventories in line with regulations

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Key finding at THE COOLING WATER SYSTEM

Designed Delta T logmean: **3°C**
Current Delta T logmean: **5.2°C**

→ **Extremely inefficient!**

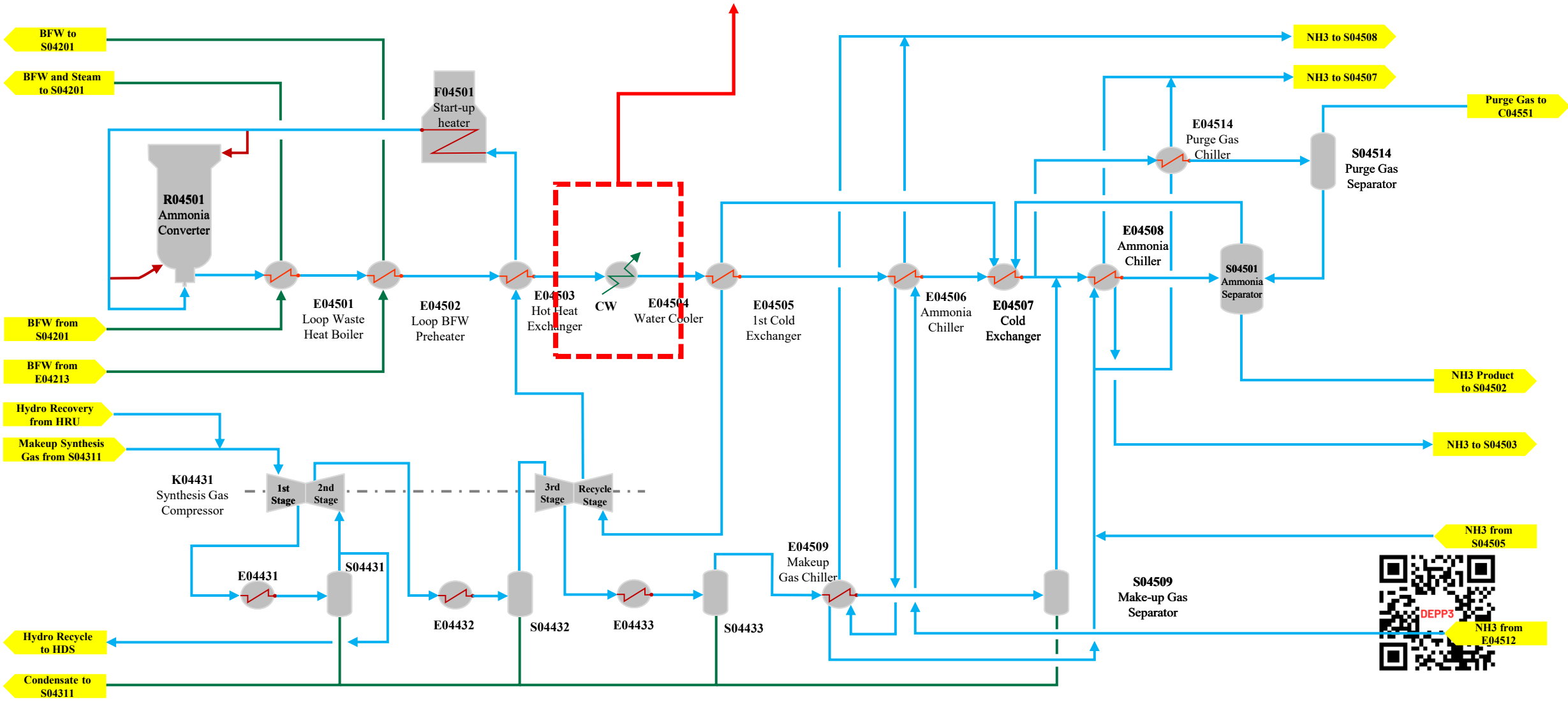
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Potential energy cost saving: USD 2 MILLION/YEAR



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